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LIVING WITH THE PEOPLE OF MALEKULA: *A paper read at the Evening Meeting of the Society on 16 March 1936, by*

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MALEKULA is the second largest and the least-known island in the New Hebrides. White men live on the east coast; there are three on the south; none on the north or west. I reached Malekula in August 1934 and stayed there until July 1935. During this time I covered the coastal and inland parts taking a census of the population of this and the small adjacent islands, total approximately 10,000 people. Recent depopulation has been very great in the centre and the 1910 Government estimate of 9000 was far too low. The great decrease all over the island occurred 1914–26. The coastal and small islands people are now mostly stable or increasing; the bushmen continue to die out.

Just after my arrival I received a copy of Deacon's splendid book, unsuitably named 'Malekula: a Vanishing Race,' on the culture of coastal, central and south Malekula. This made it obviously unnecessary for me to do anthropological study in those parts, but all the more important to record the northern culture. Deacon describes his southern work as almost archaeological, and says "Everything is gone." In the north practically all the customs, including cannibalism, are still maintained, and Deacon said of them that they "are the only reasonably intact group in Malekula, but unfortunately have been driven to a hostile attitude towards the whites, as the best chance of surviving."

Speiser (1923, p. 50) found two types in Malekula—a taller people in the south identical with south Santo and Malo people, a northern people closest to central Santo, but more powerfully built. Deacon found a similar grouping on cephalic indices, and I confirm it, adding a third short type occurring inland in the south (wearing fibre skirts) and among the larger type in the north. These groupings do not correspond with culture features: their value is doubtful. The diversity of culture in the island is indeed remarkable. There are at least twenty-six languages extant. Common to all are incision, or circumcision, penis-wrapper, upright drums, local patrilineal clans, term for one's own child the same as that used for paternal uncle's child. Deacon distinguished and attached importance to "mat skirt" and fringe or grass skirt cultures, based on female clothing. The latter include Mewun, Laus, Meru, Bugoi, Bangasa, Uerik and Mindu tribes of the centre, the first two wearing

the skirt pulled up in front. My work suggests that this classification is inadequate, for in the north there is a marked combination of the two elements, and the mat garment is closely related to "grass skirts" in form. Deacon (1934, p. 14) only adduces female tooth removal as typical of the mat culture, but this is also characteristic of the leaf-strip wearing Sakau women of Santo, whose culture is least like the Malekulan mat culture. In Plate X of Deacon's book, some squatting Big Nambas women are labelled as "wearing the fringe skirt." This photo was taken beside the sea by the film man Martin Johnson; what appear to be grass skirts are lying on the left of the picture, but the Big Nambas dress is essentially a mat, though the ends are left unplaited, as also in their headdress, penis-wrapper, and mat-money. Similarly in the Cambridge Museum is a Big Nambas skirt collected by Miss Cheesman labelled "Woman's dyed grass skirt," and she refers in her paper (1933, p. 201) to grass skirt and "grass veil." There is thus considerable confusion of terms. I suggest that the terms "dyed mat skirt," "plain mat skirt," and "fibre skirt" be used. Grass skirts do not exist. The long head-deforming people of the south wear plain mats; their secret society and death rites are elaborate and unlike those of other areas, and though comprising at least eleven distinct tribes over a wide district, this culture is unusually uniform and to a large extent peculiar to the long-headed group.

Miss Cheesman has made an expedition into central south Malekula, and surveyor McPhail died of blackwater while preparing to investigate that area. A punitive expedition went from the south coast towards Mount Goodenough. Otherwise it has hardly been explored, for Deacon kept near the sea. In the process of taking my census of the island I travelled all through it, and before describing my more particular study of the north, some account of these trips will be useful. In 1906 Miss Beatrice Grimshaw made a coastal visit; her account of conditions then is most intelligent and entertaining though her photo of a "wishing arch" (1907, p. 269) is due to an error in perspective.

One trip from South-West Bay inland and north-eastwards was memorable because it was my first experience of the curious and practically unknown fibre-skirt people with whom I got into some fearful complications, especially among the warlike Laus tribe. The Laus, of whom Deacon only noted that they were reported to have no ranked society (unlike all other northern New Hebrideans), are the southern tribe in a large mountain group who show pigmoid tendencies. Photographs of fibre-skirted people by the sea are given by Bellamy (1933, p. 102) and Speiser (1923, Plates 48 and 82). Their upright gongs are half the size of other people's, and they have the habit—unpleasant to the traveller—of keeping their best tusker pigs in the man's lodge, where the animals snuffle or nibble the sleeper, who is on a slight earth platform at one side. All other tribes fear the Laus, who are notorious fighters and cannibals, living in many small village units, five to twelve people, which frequently raid each other.

When I arrived at the first village—which is separated from South-West Bay by a wide belt of uninhabited country around the Ureymus river, flowing southward to the sea at the south coast—I foolishly walked in ahead and went straight up to the door of a house. It was a man's lodge and there were half a dozen men inside; through the door they saw suddenly a white leg.

With one bounce they rushed to the other end of the house, broke through the wall, and went for their lives into the jungle. I had two coastal natives with me; they went yellow with fear and clamoured for non-existent firearms. Not till late that night did a man reappear; I at once gave him some safety pins and matters improved. By next morning the village had reassembled, while my two guides had faded out and were half-way to the sea, travelling faster than ever before. I thus had no contact linguistically; the people were wild and unfriendly; but I must travel on north and east, censusing. As I had not been on the east coast I knew only one name there, Bushman's Bay; this

place was much farther north, and quite unknown to the bushmen. It took me five days to progress about 5 miles in the direction I wanted to go. Never have I met a more obstinate, idiotic, and unpleasant lot of people: the only thing they did not do was starve me. Eventually I did reach the east coast near Onua, after cutting my own track between Mounts Penot and Gillen, until I picked up a village in the headwaters of the Onua river system. I then travelled down this river, one of many that flow eastward from the 2500-foot backbone of the watershed, which is double, with two parallel ranges and a smaller range in the middle in some places. These rivers have cut deep stony valleys with wide beds, winding between low hills that rise up on every side to the higher ones. When I reached the coast I was greeted with amazement

by the half-caste planter there. My South-West Bay guides, in order to justify their flight, had told a wonderful story of how I had been attacked and clubbed to death by the bushmen; I had even been reported eaten. A few months later I went through another section of the Laus and their neighbours, the Meru, when I travelled from Onua inland and then south down the western range and down the great Pangkumu river. I came into contact with them again from the south-east near Mount Goodenough. They are no friends of mine. But their culture is of the greatest possible interest, because they are probably nearest to the original Malekulan stock and custom.

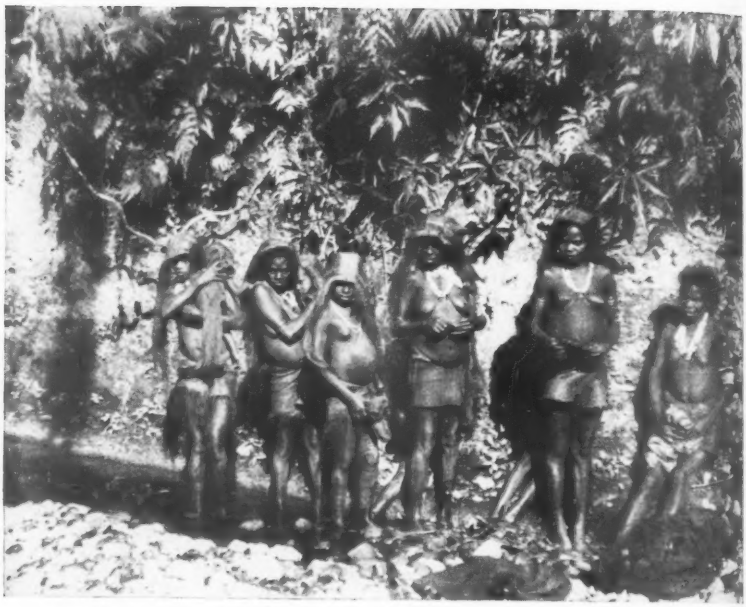
This difficulty of the natives not knowing a name or direction for any point a few miles away, this complete geographical ignorance of the Malekulan (much less marked in Santo), is a handicap in travel, and particularly in taking a census. It means that one must cover all the ground oneself, and accept no negative statement as to the absence of villages. And when one starts to do this, the amount of ground to be covered and the difficulty of covering it is astounding; this is especially so in south Malekula, where the complex topography of the ranges and rivers makes it a real job finding out where you are and where you are going, when you have neither the time nor facilities to do more than a compass and aneroid sketch survey. Even the inland long-headed people, with a more or less uniform culture and language, have practically no inter-group contact nor anything approaching a reasonable idea of each other's habits and numbers.

Another group of fibre-skirt people are those around Sharp Peak (2765 feet), farther north. They are more pleasant than their southerly relatives. I was able to study them more satisfactorily. And through a Banks Islander called Missi, a very fine fellow, I was able to help them a good deal with simple medical treatment. This section is now more or less under control, being close to the sea. Also they are dying out rapidly.

I spent several weeks at various times exploring the Pangkumu river, which I found to be the longest in the islands. At the mouth its shingle and sand bed is over a mile wide, largely in the form of a lagoon. The wide bed runs inland for some 5 miles, with big expanses of giant reed, harbouring duck, rails, and coots. There are three main branches. One runs fairly straight inland to Mount Penot (2925 feet), the highest Malekulan mountain where live the Botowut-Venuntavai tribe who, like Deacon's south coasters, deform the head, as they do everywhere inland south of the Pangkumu and east of Mount Penot. All these inland long-heads have the highly developed *nalawan* type of secret society with human effigy and skull cult varying in few essentials from the coastal long-heads. They tend to form into more definite tribal units than other Malekulans, so that a group of villages regard themselves as a unity under the name of some one village in the group. Within the group fighting is rare and war, though not carried on by a group conjointly, has co-operative tendencies. Each group regards the other with fear and dislike. Such are Limavisala (5 villages), Urumirak (6), Barumbuhva (5), Mavus (8), and Botowut (6). Of these Botowut is the most powerful—indeed it is the most powerful community in south Malekula and is regarded with almost supernatural fear especially by its fibre-skirt neighbours to north and west (Meru and Marisang).

1. Coming out of a house

2. At the edge of the village, by the dancing ground



3. Middle Nambas women

4. Tonmaru house, with raised yam and fowl house

When I arrived at Botowut, a very long day's walk from the sea, the news was out at once. It was sent in the nicest way news can be sent. A man stood in the centre of six upright slit gongs, from 2 feet to 8 feet high, and with a small log in each hand beat out in tones and times a perfect harmony describing me, my guide, my objective (counting people and talk-talk), calling in every village to see me, to examine my hair. At no time have I heard music so satisfactory and so absolutely in keeping with its environment, with that vigorous little community perched in a tree-fern tangle of hills, whose dripping forests surround one like a sponge, in which it seems that no impression or use can ever be more than ephemeral.

There were two lodges. One was tabu for the group chief, a very important person and impressively unpleasant. A peculiar female effigy signifies this tabu. The other house in which I stopped was typically crude, without any sort of beds, swarming with fleas and with hundreds of bluebottle flies which zoomed and buzzed in the darkness, looking for native sores or dampness. Into the roof of the house were stuck the effigies of the dead with clay moulded over the skulls, which gave a swarthy red-Indian sort of countenance, and cobweb hair. For an hour after sunset this desolate pocket of the mountains, deep in mist and dew, was made if possible more eerie by the swinging of bull-roarers, blowing of *nalawan* horns, and coconut shells filled with water on to which air is blown through a bamboo. A fine range of ghostly sounds was thus produced from behind the high banana-leaf fence surrounding another special house. This was part of the ceremonies connected with the seclusion and painful initiation of the young men, a period when the women live in metaphysical terror and the initiates roam over the district robbing, demolishing gardens, beating any persons who do not hide from them.

The Botowut people make regular visits to the sea at Tisman, on the east coast, bringing down yams which grow splendidly in their gardens and the big red mountain banana—the best and earliest kind—to exchange for coastal pigs. They come down the Pangkumu in large parties for protection, though this big river is theoretically neutral territory, a free corridor. They told me that they had a route to the west coast also, to South-West Bay. This passed between the Laus and Mount Goodenough, in such a way that in four days' travelling no house nor human would be seen. I arranged to come back and do this trip, but was never able to spare time. I wished also to learn to use the large bird traps that these people made in the tops of fruit trees and with which they catch many pigeons, especially a brown long-tailed *Macropygia* and a green dove (*Ptilinopus tannensis*) which are abundant.

The other main branch of the Pangkumu turns south 2 miles from the sea and travels in a quite unexpected and unique arc, parallel with the east coast from which it is divided by a 2000-foot range. It turns west behind Port Sandwich and divides up into many streams which rise as far apart as the south side of Mount Penot, the east side of Mount Goodenough, and not far inland from Hambi Island on the south coast. This area is characterized by low, irregular, rounded hills (unlike others in the group) with narrow slow-running streams, deep gravel beds and gold traces. I believe it to be geologically very old ground. In one place a recent landslip has dammed a stream so as to form a considerable lake. It was not easy to census the population,

which lived in this section mainly in family units scattered here and there all over the landscape. At one village I was unfortunate to butt into secret society rites which involved tabu on use of tracks by the uninitiated, so that the usual death penalty having been generously waived in my favour, I was made to stay five days within one small village enclosure—interesting observations resulting.

At Urumirak, on the high and fairly level land between the two big branches of the Pangkumu, there is a coal deposit, probably of no economic significance. The bird life of the Pangkumu area was most interesting; on one trip when I was accompanied by Macmillan we found several waders not previously recorded in this part of the world and a little grebe previously known only from Dolphin Island near Santo. For a person wishing to enjoy the best in New Hebrides bush life on his own and without need for guides, the Pangkumu is ideal, with lots of fish—the natives swear there are sharks quite a long way up from the sea—ducks, pigeons, pigs, and wild tomatoes; lovely scenery; rapids and deep pools, mountains, and great reed beds; not too many mosquitoes, and only a few too many flies and fleas. Prawns are abundant, but one must be careful of a sharp-horned shell that easily pierces the toughest foot and sets up poisoning if not at once removed. The native food speciality in this area is a delicious pudding of *manioc* and coconut with whole eels, prawns, and assorted fruits scattered around inside.

I travelled several times by canoe up and down the almost uninhabited west coast with its continuous line of unexposed reef. Here there are a multitude of colours, fishes and beautiful beaches with a feeling of indescribable desolation which is, if anything, heightened by the rough shelters sometimes left standing after the visit of a party from the hills behind. Casuarinas growing on low slabs of rock, caves full of swifts, herons nesting on tiny islands, and turtles are characteristic. In the deeper water outside the reef, sea-bats (giant rays) are not uncommon and have drowned whole canoes. Trochus shell abounds, with its guardians particularly numerous—shark, giant rock cod, and giant clam. Megapodes nest here in the sand, whereas elsewhere only in the earth. About November turtles come ashore in scores, and during that month I ate my way down the beaches for three gargantuan days. I can eat thirty turtle eggs. Long ago Imhaus (1890, p. 126) noted syenite, iron and copper pyrites on this coast, and suggested the need for prospecting.

I also spent some time on the south coast, including among the interesting heathens of Tomman Island, where the long-head cult has its sacred centre, Iumoran (Deacon, 1934). Deacon says (1934, pp. 69, 375, etc.) that the Tomman population is extinct; this is an error, there were over a hundred in 1935, though very few children. For some reason these people are mad on alcohol, and the French supply them liberally in return for copra. There are amusing stories of thirsty recruiters short of their grog who have called in at Tomman Island and been offered their choice—Pernod, rum, champagne, or beer. Certainly all these long-heads on the south coast are now degenerate. It is possible that deformation of the skull in infancy affects their mentality.

In this way, and in a number of other trips of much the same sort, I covered the ground as thoroughly as I could. But it was in north Malekula, on which I have not so far touched, that my main interest and activity was centred.

Miss Cheesman, Deacon, and also Martin Johnson had touched on these tribes and said something about them in print. Their observations went just far enough to show the unique features and how little was known about them, and so to whet my appetite. They were feared by whites and natives alike, and though only a few miles from the sea and often recruited for plantation labour, no information was available as to their habits, numbers, or topography, except that they were still numerous and cannibal.

The Nambas tribes of N. Malekula

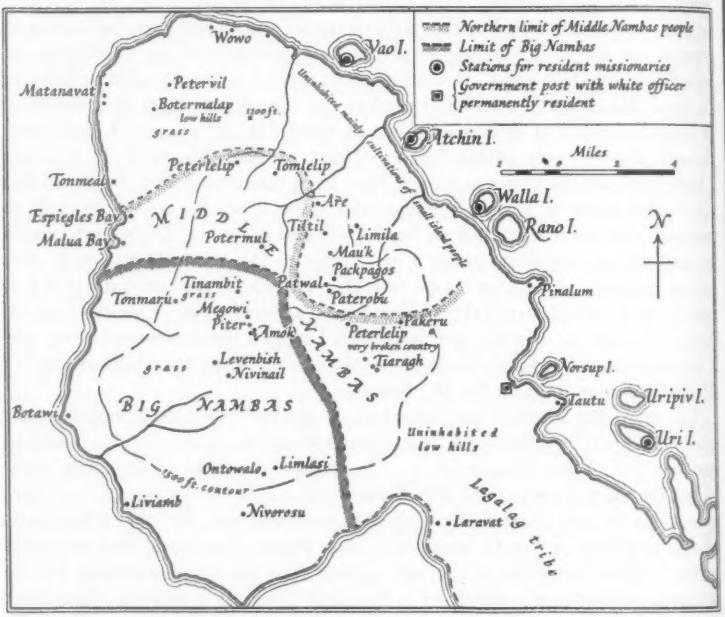
I spent off and on about nine months among the north Malekulans. During part of this time, and because of my acquired knowledge, I was working on behalf of the government. This did little to change my behaviour or affect my status, because I had orders only to report and to use peaceful means of control, no force. These powerfully armed people had no knowledge or regard for outside control. It was my job to record, not to act, and in order to do this I did all that I could and used all my experience to get the maximum of confidence and of information out of these difficult people. I have been through almost every village, large or small, in north Malekula. Sometimes I have been unable to get guides or have been threatened with death if I did come. But there is always a way round these obstacles somehow, and so long as I kept my temper and my head I was able to find it. In the end I could go, and did go, anywhere at any time, except to the great village Amok with over a thousand inhabitants who would, no doubt, have eaten me if I had been foolish enough to call their bid and make a fourth visit. This was because Nesai, the chief of Amok, considered that I helped their enemies; Nesai was a megalomaniac dictator, the apotheosis of that jealousy which reaches a Melanesian maximum in the Big Nambas.

The term Big Nambas has been loosely applied to all the peoples on the northern "knob" of Malekula, area about 800 square miles. Much confusion has resulted. Thus Deacon (p. 7), who visited the coast of this area, says: "How far the territory of the Big Nambas extends is not known. . . . There appears to be still constant fighting between them and the other inhabitants of this northern region to whom the name Small Nambas is very generally given." Miss Cheesman is the only person who has given anything like an accurate account, as a result of a few days' visit to Tonmaru, the village nearest to the coast. She says (p. 200): "The Big Nambas are continually fighting with their rival tribe the Small Nambas." In fact no such tribal unity exists, either here or elsewhere in the Group. The village is the fighting unit, and though the Big Nambas is a cultural unit, the Small Nambas is not. Other visitors to the area, who stayed by the sea or at Tonmaru, are Martin Johnson, whose account in 'Cannibal Island' is inaccurate; Templeton Crocker, collecting specimens for American Museums. My friend Alfred Guthmann of Tahiti made a four-day visit in 1934, and has allowed me to use his valuable photographs. Speiser (1923, Plates 6, 13, 24) visited the coast on a recruiting ship, and his photographs of men show some fine types. One Presbyterian and two Seventh Day Adventist missionaries have passed along this coast, and the magnificent old Catholic Father Bancarel has visited Tonmaru. Until my visit no reliable information was available, and no

information at all on geography or anthropology, except some notes obtained by E. A. Corlette, a planter, which is included (unacknowledged by the editor) in Deacon's 'Malekula.'

The *nambas* is the red penis-wrapper mat worn in this district. Fourteen tribes are extant, with dialect differences which I found could be classified conveniently into five groups. The term Big Nambas should only be used as below, and the term Small Nambas sometimes used for south Malekulans should be reserved for the extreme north. The southerners are better called fibre-skirt and long-head people. The East Malekulan term for the Big Nambas is Bwes E-Lep.

(1) *Coastal.*—Existing villages are Tonmeal, Matavanat, Wowo, Pinalum.



With big canoes, typical patrilineal culture, and decimal numeration; a strong infusion of late elements of a Polynesian type, secondarily from the islets Vao, Wala, Atchin, Rano and movements from inland in a reverse direction; including bird of prey effigy cult, highly developed pantomimic dances Na-leng, ritual voyages connected with initiation and a benign creator. The graded society, *Maki*, is transitional between hereditary, individualist, and communal. Some of these coastal people are Christians.

(2) *Small Nambas.*—Several tribes in two dozen small villages, at 500 to 1500 feet among the tangle of hills and narrow valleys at the northernmost end of the "knob." These people have semi-hereditary chiefs and live close together in small villages; they are decreasing more rapidly than their neighbours, and several tribes are on the point of immediate extinction. I have listed more than a hundred villages extinct within memory. They are less

savage than the other inland groups, partly as a result of depopulation. They use mat-money, and the women wear short red-fringed head filets. Stone dolmens are used in *Maki* rites.

(3) *Middle Nambas*.—Six villages at about 1500 feet. Vigorous fighters, especially cannibal, very anti-white man. Rites, physique, language, and clothes intermediate between big and small Nambas. The patrilineal village exogamy system of north Malekula necessitates inter-breeding between all the tribal groups. The Middle Nambas are the marginal weakening of the dominant, very powerful, Big Nambas blood and culture which has expanded and even continues to expand as no other single tribe in the Group. This type includes the large and vicious Marakaus tribe with the village group Tirogh, who repulsed a large punitive expedition in 1916, have killed several whites, and are still dangerous, though responding somewhat to my friendly overtures and treating me well during my stay. The village of Matano, extinct about 1910, was a near-coastal village within the Big Nambas area; the people used bamboo rafts and did not wear a big nambas.

(4) *Telag and Lagalag*.—Tribes to the south of Big Nambas living in fairly flat country. There are some Big Nambas features on the north edge, but otherwise the culture is typical of the general type described by Deacon for Lambubu, with highly developed secret and ranked societies, non-hereditary. These people are fairly tame.

(5) *Big Nambas*.—This is one tribe with one dialect and one culture throughout, typified by strict hereditary chieftainship, which is found nowhere else in the northern New Hebrides. Their obvious distinguishing feature is their penis-wrapper. All other Malekulan males wear this as a simple leaf or mat, tied into the bark belt above; but the Big Nambas wrapper is a thin strip of red mat with 2-foot long thread fringe left unwoven all down one side; when unravelled this is similar to a simple fibre skirt. This forms a unique garment. Their skulls are of an ancient type as in interior Fiji (Deacon, 1934, p. xxii). I lived mostly among these warlike cannibals, who inhabit the wide and roughly circular cane grass and jungle plateau around 2000 feet. They are very Melanesian, black, heavily bearded and with a frequent pigmoid strain, often with white seastones through their noses, and large bellies. They are the most famous, least known, and probably most interesting natives in the Pacific to-day.

The population of the Big Nambas is somewhere about 2200. I was unfortunately unable to take a full census of Amok; the high chief there, Nesai, was hostile to all whites in a marked fashion, and was the only man in the area with whom I was never able to enter into any sort of friendliness. Several visits to Amok only enable me to state that it is much the largest village in the New Hebrides, with at least one thousand people; the other villages, all of whom were fighting Amok throughout my stay, liken the Amokites to the leaves of an orange tree and Amok itself boasts of eight hundred guns with enough men to carry them into action—though it is of course unthinkable that more than twenty should be used at one time, unless a European punitive expedition approached, or rather retired, in absolutely the wrong way. Apart from Amok the population is, from north to south Tinambit, Tonmaru, Megowi, Piter, Levenbish, Nivinail, Ontawalo, Limlasi, Nivorosu. There is

no doubt that the population was much greater in the past. Several villages have become extinct in the past five years and many in the past twenty as the result of introduced diseases, war, and maladministration. The population is still decreasing, though not rapidly. A very little medical and general assistance would save the most interesting and natural people left in the Pacific.

Unlike other areas of Malekula the Big Nambas country is a fairly level plateau, at about 2000 feet. The northern part is mostly covered with high wild cane grass, *Miscanthus japonicus*, up to 9 feet high. To the south typical jungle, with numerous running streams quite absent in the cane; the whole is an uplifted series of coral terraces, such as are found widely but less strikingly elsewhere in the group. Several outcrops of red earth, probably ferruginous, are important as sources of earth-fids eaten and used in magical rites to induce pregnancy in apparently sterile women. The wild cane grass is valuable as a protection to the village, for it is extremely difficult to find a track or to run away quickly (after an attack) in the dense tussocks which incidentally cut an exposed surface of skin all over with an infinite number of fine cuts; not pleasant. The cane is used in fencing, being interwoven into very tight lengths which surround each house separately. The only entrance into each such house enclosure is through a square hole 2 feet off the ground; it is difficult to get through this quickly. Narrow pathways are left between the fences, and it is this that gives a Big Nambas village its rabbit-warren appearance, an intricate labyrinth of runways which utterly confuse the stranger, as they are intended to. No other tribe separates each house in this way, and over much of the New Hebrides a village is a very scattered affair, without cohesion, not noticeably a village.

There are three types of house: the lodge, for men only; family houses; yam-houses, which are simply large wild-cane boxes raised a few feet off the ground, and used also for keeping fowls. The lodges are particularly fine, sloping from a high front to ground level at the back; the eaves go down to the ground as in all Malekulan dwellings. On the ridge pole in front there is an effigy, a human face carved out of tree-fern, with distinctly Jewish features (like so many local carvings and a good many natives themselves). Inside the lodge, with its tiny square door, it is dark; from the roof hang all sorts of curious twisted sticks, baskets, *kava* troughs, bows, and bones. On a low stone dolmen at one end whitened skulls provide the only touch of colour. Colour is less important to these people than to most; even dracaenas and crotons are rarely worn. Along the walls are crude beds of a few sticks laid side by side, nearly always parallel with the wall (in Santo beds are always at right angles). The ordinary houses where the women and married men sleep are cruder, and very dark. Fires are kept burning day and night inside. The smoke hurts one's eyes, but keeps out mosquitoes, which are not numerous but are especially fierce on the plateau.

Each village is divided into a number of lodge-groups or sub-clans; each sub-clan has its hereditary chief and certain minor rituals and properties which are entirely its own concern. Over all these lodges there presides a principal hereditary chief, the direct descendant of the founder of the village. He is the boss. He has more power than any other person in this part of the

Pacific and is the only true hereditary chief in the northern New Hebrides. Theoretically all pigs, women, tabu objects, and decisions rest with him. In all transactions between individuals or groups he has a special percentage profit. Though not regarded as in any way divine, the whole village accept him unconditionally as their head by right of inheritance. He symbolizes the village unity, the essential community unit. Outside his village he has no jurisdiction. Miss Cheesman (1933) was misled by Ringapat of Tonmaru, who led her to believe that he was King of the Big Nambas. Such an idea is absolutely un-Melanesian. Ringapat carried the joke too far when he presented a spear to His late Majesty King George V, through Miss Cheesman. For like all Melanesians he is a great braggart, as well as a particularly accomplished liar. He let it be known far and wide that he and the King of England had cemented an important alliance. The other chiefs were furious. For between each village there is intense rivalry over everything; jealousy reaches a height of apparent pettiness. The basis of this rivalry is in the exchange of pigs through the mechanism of the all-important graded society, the *Mangke*. Whereas in other tribes the *Mangke* is primarily individual and directed towards the attainment of chiefly powers, in the Big Nambas, owing to the unique hereditary system, it has become a communal, inter-village competition, in which each village strives to collect and distribute more pigs than any other. Tonmaru happens to be much behind some other villages in its *Mangke* repayments; it is in debt to Amok, Tinambit, and Potermul (Middle Nambas). Therefore it loses prestige or "face." So it came as an especial insult when Ringapat started to boast that he was their King; several southern villages had never even seen the man. One of the harder jobs I had was to clear up the mess of resultant ill-feeling and war that resulted: and in the process I trust that Ringapat learned to hold his tongue a little. He is the most charming of all the Big Nambas chiefs, and much the most intelligent. He alone is aware that the white man has great reserves of power and death that he has not yet shown here; he alone is intelligently directing the life of his village in keeping with changing conditions, being keen to get medicines and outside knowledge. Miss Cheesman is largely responsible for this satisfactory condition. But again he exaggerated a little about giving up fighting and cannibalism; he has himself eaten human flesh since Miss Cheesman was there.

The *Mangke* pig exchanges are undoubtedly connected with earlier human sacrifices, which still exist at Matanavat (coastal). John Layard and myself have independently collected strong evidence to show that the graded society over a wide field was partly developed from a system originating in the centre of north Malekula, and the Big Nambas rites are therefore of particular interest. My notes on this subject will be published, with my other anthropological material, elsewhere. There are four grades in the *Mangke* society at the present time; the hereditary chief ascends these automatically, but the full ritual is gone through in much the same way as in areas where the society is open to all comers. In the adjacent Middle Nambas villages the strictly hereditary system is intermixed with the widespread one, *i.e.* the society open to every one who can get pigs to buy the grades.

Another peculiar feature in this tribe is succession. When a chief's son has

been circumcised—a very elaborate business with especially severe seclusion, hoaxes, and tests—he is passed into the higher grades and up to *Maliun*, the highest, by his father. He is then about seventeen years old. He at once takes over control of the village, at least outwardly; his father is definitely no longer chief. The father is glad when this happens; he is proud to have his son replace him. Until recently chiefs were made to drink a leaf concoction in their youth, the effect of which was to make them grow incredibly fat; so fat that to walk was an effort. The chief is meant to be inactive. He takes no part in war and is immune from shooting. Unfortunately since the introduction of firearms, war has lost most of its ethics and chiefs are no longer immune. Several chiefs have been shot; this has a very serious effect on the whole social system and is one of the several reasons why fighting is no longer to be encouraged as a natural, eugenic, and dynamic element in native life. Until recently also women were not killed, for the good reason that patrilineal local exogamy causes the women married into any village to be those born in other villages. Therefore if you shoot a woman in an enemy village she will not be an enemy person, and may well be one of your own group by birth.

The apparent causes of war are even more trivial than the European ones. I have seen killings start over a visitor from another village accidentally treading on a chief's dog; about a fowl chick; a woman wanting a passing man who refused her, so that she in a rage rushed home and accused him of what he had refused to do. Actually immemorial vendettas are the basis; every village has some such vendetta with every other, and it is simply a matter of policy, energy, arrogance, how many such will be awakened and kept going at any one time. No peace has ever been permanent, nor is it ever intended to be. War, or more properly I should call it man-hunting, is (with its opposite number—the *Mangke*) Big Nambas fun and play. Its essence is ambush and surprise; its apotheosis, the bringing back of the corpse to be eaten. Death may be ordered by the chief within the village as a punishment for certain social crimes; but only enemies are eaten. The clan organization and totemic origin myths group two or more villages together by classificatory kinship. War between two such villages occurs, except in the southern section—Ontowalo, Nivorosu, Limlasi, and recently evacuated Maleya—who all trace descent through the yam back to a bird (*Gerygone*) and the Giant Clam. Ontowalo is to some extent head of this group, by reason of its coming out of the head of the yam, and all three villages act together against their hereditary enemies to the north, south, and east.

All men live in a state of suppressed fear: sudden death is always round the next twist in the incredibly winding bush-trail. Again, the gun has introduced an upsetting element, a new and dreaded death that seems to the native unnatural. Men who have been shot, if not got away by the killers, are buried without the usual rites, far out in the bush, away from the village, lest the bullet in its immaterial after-life wanderings return to kill other people in the vicinity. Commonly a party of young men, after much metaphysical preparation, go out at dusk on a killing expedition. There are in each village three or four war-leaders who direct these activities, and are in fact professional trouble-mongers. Morkate, of Tinambit, is the cleverest and bravest of these (see Plate 5). Often a house is surrounded silently at first

5. Kali and Morkate (on the right), warchiefs of Tinambit

6. Lorambit, chief of Tinambit

7. "King" Ringapat in a cane brake

8. The cannibal smile

morning light. When the occupant comes out everybody lets fly. Shooting men in their yam-gardens in the early afternoon, when one is hot and drowsy, is popular. Sometimes pits with stakes are cunningly dug and hidden. Should the man fall dead or wounded, he is quickly slung on to a pole, lashed at ankles and wrist, rushed home. Some of the party stay behind as rearguard cover against the inevitable, but inevitably half-hearted, pursuit. There is nothing brave, from our standpoint, in Melanesian behaviour.

During the year I was in the Big Nambas thirty men were killed; about seven were successfully taken back and eaten. Incidentally the amount of effort and of fear in this is considerable; many anthropologists who have only worked in pacified areas under-estimate the fear element. South Sea savage happy days and play pictures are absurd, and even a sound account of a community life and cohesion under such unnatural (non-primitive) conditions must necessarily lack the strongest masculine and changeable, possibly disruptive, factor. The "savage" thus studied is no longer savage. The return of the war party with a dead enemy is an occasion. There is no mad rejoicing—indeed, these people never let themselves go quite, seldom show excitement at all; a party of men go at once to the gongs and beat out a particular rhythm, which summons the village to the dancing ground, *nesara*. This is at one side of the village, a long glade with great banyan and teak trees overshadowing the bare earth, a line of stone monoliths, and the upright wooden slit-gongs, with their harsh-carved, wooden faces. Six of these drums form a group at one side of the glade; from 3 to 9 feet high, they are beaten by several men in intricate patterns of lifting hands and energy. The music gathers up the excitement on its own momentum, outside the individual, in a great wave sweeping over the plateau; tides of sound that make the air sag and vibrate with the gong-time, indescribably intricate and swift, are thrown to and fro in angry chunks of noise.

Each time that I heard the first terrific crescendo my hair, long though it was, stood on end! All through the night the waves flow on, booming out for a minute or two, silent some moments, then again out. To this mad music the men are dancing, not with any notable abandon but with a purposeful incessance, a night-long repetition of set movements, stampings and rushes suddenly, while the corpse hangs carelessly over a carved face on the largest gong. The women prepare yam and firewood. Near daylight the typical oven of red-hot stones in a hole is made ready. With a special club the corpse is beaten until the bones are well broken. With hard bamboos the flesh is cut into large portions, wrapped in "native cabbage" leaves and in larger leaves, then placed on red-hot stones. Other stones, then more leaves and earth and ashes are piled on top, till a steaming mound is formed. After some hours the oven is opened; the meat is now cooked. This method is used for nearly all food and is the best known to me, all the juices being retained. Every man must eat a small portion. This is not a pleasure or a meal so much as a communion, an apotheosis of victory, supreme insult to the enemy. The participators are to some extent considered to gain the *mana* of the enemy; more important is the idea that the enemy village has "gone down" and the eating one "gone up," in the same way as in *Mangke* pig exchanges and in keeping with basic rivalry. In the Big Nambas cannibalism is rather secular. Only

male enemies are eaten, and any one of the enemy male community is equally satisfactory; vengeance is not focused on the individual responsible for the fight. In adjacent tribes cannibal motive and technique vary considerably. The Middle Nambas really enjoy flesh and eat women. There is a certain greasy look about the eyes, which the natives and I recognize in those who are addicted to human flesh. The inner thighs, breast, and head are said to be particularly tasty. The taste is like sweet and tender pork. Some men get a liking for certain parts; I know one who has eaten a hundred legs in his good old life. Usually women may take no part in all this, but in the Small Nambas they may eat other women in certain circumstances.

At Matanavat and an extinct village nearby on the coast, there were remarkable rites of human sacrifice connected with the highest grade of the *Mangke* (called here *Maki*). These involve stoneworks closely approximating to the Polynesian *marae*. The hawk, the snake, and the Cycas palm—all of immense importance in Malekulan culture, and providing links with other cultures remote in space and time—are of special significance in this rite. The title of one who has sacrificed a human is *maltanas*, the name for an extraordinary kind of war-magician in adjacent Malua (Middle Nambas). The essential for sacrifice is a boy born out of marriage. As all girls marry at or before puberty a bastard is very rare. He is reared with great care by a chief who buys him at birth for pigs. He knows nothing of his fate: it would be death to warn him. When the boy is adolescent, he is made the centre of and leader in many preliminary *Mangke* rites connected with gongs, pigs, and dances. In the final stage, after two years' preparation the boy, beautifully painted and beflowered, dances before all the rest; dances up to the chief, who is seated on a stone altar in a special open hut under a hawk effigy. Suddenly a noose is slipped over his head, he is jerked off the ground, and clubbed on the head with a ritual club. It is most significant that the Matanavatese never eat human flesh; the boy's body is sent to Wowo, on the north coast, to be eaten. Bodies are always divided and sent out to other villages on all cannibal occasions. The recipient of a portion has, of course, to repay it in due course or lose face; this is the cause of many apparently pointless wars; it has also caused the sudden murders of unsuspecting whites.

Wars do not go on all the time. Peace is necessary for many reasons; especially because in war the exchange visits essential in birth, marriage, or death transactions are held up. *Kava* and the bird *Malau* (Scrub-turkey, *Megapodius layardi*) are used in peace making. The latter is exchanged with rites which cause a more or less lasting peace. The former seals the compact or temporary truce. *Kava* is a small bush (*Piper methysticum*), which comes into most magical performances, as well as being the chief beverage. The roots are smoke-dried in the lodge (the plant is tabu to women). When needed, *i.e.* every evening at dusk, the root is chewed, mostly by the older men. After about twenty chewings the resultant mess of pulp and saliva is spat out into a palm-frond base trough, set on five little posts a few inches off the ground and just inside the low square door. Water is poured on from bamboos, while a small boy holds a lighted wild-cane torch at one side. Each man in turn goes down on hands and knees before the trough, to suck up as much of the thick green liquid as he can by putting his mouth to the surface and

sucking in. Like all things Hebridean, there are rules and regulations in this. *Kava* bye-laws do not permit that the drinker take breath while he drinks; and it is only good manners to make as much noise as possible in the process. I gained a good deal of prestige because I could make nice new jazzy farmyard noises while I was drinking. I never got to like the taste of the stuff—soap and water—but I liked the effect. The effect is to negative the legs, so that it becomes impossible to walk. One's head remains quite clear: thoughts and words come clear, quiet, unangry. After a while you fall asleep. There is no headache or hang-over next morning. Unlike most drugs it is not habit-forming; it has no bad after effects, except where it is drunk green, as on Omba and Pentecost. It is good for the temper and the appetite. Misguided missionaries have fought and in places abolished *kava*, regarding it as a heathen evil. But it is a good thing, to be encouraged. In south Malekula and the islets off the north-east coast it is not drunk. I collected a lot of information on *kava* from various islands, because Rivers' (1914) scheme of Melanesian culture centres around his hypothetical "Kava People." My data do not support his theory: *kava* seems to have been a habit-diffusion, spreading widely, locally erratically, sometimes very recently, without any comparable spread or movement of people. Many features of local culture (*e.g.* the graded society, the benign creator idea) have spread in this way, often recently. Insufficient allowance has been made for such movements of objects and of ideas in Melanesian anthropologizing.

Some of the most pleasant evenings of my life have been spent drinking *kava*, listening to the endless running flow of words, the trivial described as only the "lowest" savage and the highest genius can describe it; so that every angle, incident, word and thing appears again to conjure up a scene not simply of "He said to me, I said to him" (our way), but with all the materials of reality arranged by the teller into his own pattern. This is art. I had not previously realized that talk could be more than conversation, quite probably boring if at all elaborate. Talk can be a people's highest manifestation; a fact we whites have forgotten since Dr. Johnson.

When peace is made, the side that is "down," that has not yet avenged its dead in the war, is recompensed by payment of one tusker pig per human caput, and after this the *Mangke* often comes, theoretically to cement the peace, actually to accentuate the impossibility of peace. When I had been some months in the area I thought that I knew a good deal about it. So I stimulated an already pending *Mangke*, thinking thus to make everything happy and nice. I overlooked the everlasting competitiveness of the business-man Melanesian. With difficulty I arranged a great *Mangke* at Tinambit in the northern Big Nambas. Three hundred pigs, many of value, were involved. Unknown to me the erratic and wall-eyed boy chief of Tinambit, Lorambit, who is always giving and taking insult, arranged with the chief of Tonmaru, Ringapat (who was to act as delegate pig-killer, in accordance with custom), that most of the pigs should be given to small Megowi. This would be a good joke and repay a similar incident done at the expense of Tinambit when Lorambit's father was chief. When the time came for the pigs to be killed, after three days of final dancing and feasting, the Tonmaru and the Tinambit chiefs—painted and carrying their newly face-carved killing clubs, conch-

shell trumpets blowing, gongs booming, every one rhythmically stamping and shuffling forward in a tight column, myself contentedly in the wake—went round the long line of pigs tethered to monoliths (there are no stone tables), right the way round the village, and to the amazement of every one pointed pig after pig for Megowi. Worse, they clubbed most of them dead on the spot, though it is usual to touch them with the club, which renders them technically dead, of no further use ritually, but easier for the recipients to carry home. The Megowi men staggered to and fro to carry about six large pigs per head, custom compelling this before the sun went down. They were wild with fury as they toiled along under the decomposing burdens they could never eat, while large Piter had barely enough for one decent meal. The alliance which I had hoped to consolidate, I did in fact weaken; and there is not the slightest doubt that this affair will lead to serious trouble between all the villages of the northern group. In the absence of recorded data it is only by such experience that one can learn Malekula: deep pools that lie below what look like shallow waters. It is the chief who determines these little incidents; in him great power is vested, so that though controlled to some extent by public opinion and to a considerable extent by tradition, the Big Nambas chief has greater freedom than any other Hebridean individual. The chief has up to forty wives (nowadays). He has children by a few of these; the rest work to make his extensive gardens and feed his pigs. He is usually genuinely fond of his first wife and son-bearer. The chief also has a personal attendant who carries his pipe and gun. Women are not infrequently dissatisfied; they then run away to their home village, and this is a potent cause of war, for the Big Nambas men are extremely jealous husbands. Dissatisfied or unfaithful wives are the cause of many wars and killings. The chief also has a mouthpiece, an orator who announces publicly his decisions. All women and pigs theoretically belong to the chief, and in practice he receives a useful commission on all individual transactions, so that he cannot fail to be wealthy. And his wealth is essential; he must redistribute it and put other chiefs in his debt in the *Mangke* to keep up the village prestige.

Clearly then it is the chief with whom the traveller must establish himself. Whereas in most tribes the friendship of one individual will insure food and shelter, in the Big Nambas one can do nothing at all unless accepted by the chief; it is unwise to stay in a place on any other terms. I made my first successful contact with Ringapat of Tonmaru, a trail already blazed for me by Miss Cheesman. Through him I extended my wandering until after some months I was more or less free of the whole area, a position until then enjoyed neither by native nor white. Some of the natives became extremely keen on anthropological information. Often I was asked to take out the black book and write down some myth or rite they would tell me. But most of the time I wrote down nothing, being too busy eating, sleeping, drinking *kava*, living hard and good, until I became almost part of the landscape that did or did not talk or listen (according to how I felt); this was the position I sought to attain, where life flowed on around me naturally and almost unaffected by the presence of this no longer stranger. When these (or any) people know that they are being watched, recorded, they are obviously not the same people. There is so much of interest that one can spend all day

writing notes, but the wood gets lost for the trees. What oceans of error we should have been spared if those who write about the "savage," primitive mentality, etc., had done more primitive living! If Levy-Bruhl had spent a fortnight among savage fleas; Rivers gone ashore more often from the *Southern Cross*. To my mind recorded customs have no standard or point unless the conditions and necessities which determine them, which cause and are caused by them, are well understood. I kept my note book out of the way until I could do moderately well at least two things peculiar to the people I was living among.

Over all there is the creator Horo, and his opposite number the ground devil, Tanas of evil ways. These two with a multitude of lesser spirits limit the supernatural belief, which is not a complex one. At the native new year periods of seclusion are devoted to the spirits. Tanas demands deeds of vandalism and assault. These secluded periods are treated similarly to secret society rites in other areas (*cf.* Deacon); there are no ordinary secret societies. Connected with this are three things of dominating ritual importance, the Cycas palm, the Hawk or Harrier (*Circus approximans wolfi*), and the Snake (*Enygurus*). These three have a widespread importance. The hawk is the emblem of height, power, predatory living, and an eye that looks down on all things. All over the group its feathers are the mark of chieftainship, and its name is some form of a syllable *mal* that recurs again and again in the most important rites. In some places the Frigate-bird replaces it; the Frigate is the predaceous and high-soaring bird of the sea. Through these birds it is possible to link up certain culture items all over the Pacific (*cf.* Balfour, 1917). To the Malekulan the idea of height and of ascending is vital; the graded society around which all things centre is really a social ladder, literally, and life is a sustained effort to climb it rung by rung. In many islands, especially patrilineal ones, the women too have a graded society, more simple than men's.

The finalization of pig-killing rites is the Na-leng dance. Na-leng is always done by day, unlike most dances. There are a number of forms; all are representative of symbolic actions, and characters including birds (particularly the hawk), men dressed as women, spirits, and perfectly drilled ranks of men as chorus. The Na-leng is in my opinion the finest thing in Hebridean culture, and a very fine thing by any standard. Layard is shortly publishing in *Folklore* an account of Na-leng on Atchin, in which he shows how it can be related to ritual and human thought in remote parts of the world. In the Big Nambas all dances are Na-leng type. Men and women dance separately on all occasions.

Magic in this area is organized on a lodge basis; the individual magicians are controlled and limited by traditions and necessities of the sub-clan, and through it of the village. Malignant magic is the concern of some lodges, benign and harvest magic of others. Malignant dominates, but it is directed against other villages and particularly against their food supplies in times of war. In most parts of the group the uncontrolled sorcery and black magic of individuals is a constant source of fear and war or murder. In the Big Nambas the essential unity of the village, and to a lesser extent of the group of villages forming the common ancestor clan, excludes any such personal devilry. There is no constant fear of poison and death by witchcraft; so that

these people have in this respect a considerable advantage, a better integrated culture. Divination is another important job, carried on by individuals who inherit the technique. Medicine is mixed up with magic; both in male and female branches of the art the psychological factor is at least as valuable as the physiological. Undoubtedly some native drugs are effective, especially those connected with sexual functions. Concoctions of leaves, roots, earths are used to cause abortion, contraception, and even permanent sterilization. The drug for this last operation is probably of recent spread in Malekula, where women working on plantations have learnt it from Pentecost and Gaua women, who are experts in all forms of destroying potential children. Many women have bought this secret from others and at once rendered themselves permanently infertile; their men are furious, but can do nothing. The women do it quite irresponsibly, because it is a nuisance having children. It is very difficult for a foreign man to find out what women here really do think, but I believe that certainly all Big Nambas women do not particularly want children and have astonishingly little family consciousness, at least until they get older. It is the men who exert the pressure on the women towards having children, because their after life depends on sons to attend them in death and to respect their spirits through the skulls removed from the corpse some time after death. This is by no means true of many tribes; the local attitude to children and pregnancy, which one might expect to be fairly constant, varies to a remarkable extent from place to place, according to the system of descent, inheritance, and death rites. Yet the general character and behaviour of the New Hebrideans is closely similar in many respects throughout.

Like all people who do not write, they have perfect memories, and this enables them to tell and remember a very large number of myths and legends. Each small district has its own origin story, of how its first man or woman came out of a sea-shell, tree, bird, pig, stone, or tuber. Interesting is the distribution of the story about a boy and a girl coming out of a fruit that fell and split on the root of a *natabol* tree; this is found on south Santo, Malo, Vau, Atchin, Walla, Rano, Epi, and north Malekula, much the widest spread of any origin. The northern Big Nambas have this origin, but in the centre and the south ancestors are eel, yam, pigeon, warbler, prawn, pig, bat, giant-clam, vine. Out of these stories and others arise the sacredness of many objects and the numerous food and killing tabus. There are tabus about the weapons you may carry and how you may carry them; where and when you may dig a hole; what relatives you can approach and whose jokes you may laugh at; in what position you shall approach the chief on various occasions; planting; procedure towards women; shooting at certain seasons and the new moon; seeing the sea during certain rites; eating many foods during times of circumcision, pregnancy, preparation for war, rain magic, *Mangke*, and so on—hundreds of them. The stranger must learn these quickly and always observe them. The odd whites who have contacted the Big Nambas have carelessly or ignorantly crossed the tabus and trouble has resulted (*cf.* Cheesman, 1933, p. 204). The heathen bushman has no time for the white unless the white can show himself a good man at the natives' own game.

Around each village the gardens are distributed in accordance with individual ownership. Gardens are not far away, as in many tribes, and each

individual has land available in the immediate vicinity; it is unsafe to cultivate where an enemy may easily approach. Thus by far the greater part of the area is untouched by cultivation and has been for centuries. For the villages seldom shift, unless totally vacated in war; thousands of acres of perhaps the best land in the islands is there, and there is no reason to suppose that it has ever been used, even when the population was far larger. It is interesting to compare the Sakau system, in which very minor incidents of war cause a village to move a long way. With a matrilineal descent this has no serious social consequences, but obviously any change in a patrilineal local exogamous tribe is more upsetting, particularly when there is an intricate system of village and lodge hereditary chieftainship. One of the most regrettable things about the modern firearm wars in the Big Nambas is that now, the fear of death being much greater and the old rules having largely collapsed, total evacuation of sites is no longer rare. The gardens are more extensive than in most areas, very well fenced and tended—the women doing much of the work, the men helping during the intensive stages. Yams are principally cultivated and form the staple article of diet. These yams are the finest in the Group. About seventeen varieties are recognized, some very large. There is a special local technique of mound planting; in some neighbouring tribes an ingenious circular arrangement of canes for the young climbing vines is in use. Dates of planting and harvesting are determined by seasonal phenomena and by the chief, who takes the initiative in each phase of cultivation, cutting, clearing, and burning the clearings, etc. In the southern Big Nambas villages a sacred yam plant has been grown from time immemorial inside a small fence on the main dancing ground at Ontowalo; this is the ancestor of all the people in that part, and the annual cycle of agriculture is determined by the growth of this plant each year. The drainage and the water supply are unsuitable for *taro*. Sugar cane grows well and is cultivated to an unusual extent; some villages have no water in the immediate vicinity and sugar cane is thirst quenching. Coconuts grow well in all parts of the north, though inland in the south the tree does not flourish and it is absent in the centre. The coconut is undoubtedly of recent origin in north and west Malekula; the native story of its origin from the head of a snake (ancestor of Levenbish village) is that found all over Polynesia and recorded from New Guinea. Several varieties of breadfruit occur.

Though fragments of prehistoric pottery are to be found on many cleared pieces of ground, there have been no whole pots within memory in Malekula, except in connection with certain magical rites in the south. The native hole and stone oven is used to cook most foods. An astonishing variety of dishes can be made from yam, mixed with other stuffs to spice such as palm-shoots, beetle larvae, whole eels (which swarm in the tiniest patches of moisture about December), prawns, turtle and megapode's eggs, sedge shoots, pig, fruit-bat (*Pteropus geddei* and *P. eodinus*), rose-apples, *nungi* nuts, coconut oil, "native cabbage" (the red-veined leaves of a small bush), red earth, pigeons, doves, parrot, fowl, various wild fruits in their season, unripe banana (not popular here, though a staple on the Atchin group of islets and in some Small Nambas). Meat is not eaten every day; pig-hunting is the pastime of the younger men in times when no rites or economic activities are on. Wild pigs are numerous,

especially in the wild cane, whence they are driven forth around August by carefully arranged fires; the fires also prevent any larger jungle vegetation from gaining a hold, so that the cane is preserved as an annually re-growing and probably unnatural climax. Dogs are trained to corner pigs, which are then clubbed at some risk to the clubber. Sow may not be eaten by men; fruit-bat may not be eaten by women. Birds are skilfully shot with bow and an arrow, arrows blunted with lumps of wood or coral being used for the small birds. Fall-trap snares are made. In the cane jungle there is a small black rail, *Porzana nigra*, very rarely collected. When I got my government job I offered the Big Nambas a reward of eighty sticks of tobacco (£1) for one of these birds, which I had often heard at a few feet in the dense grass tussocks, and once seen. Despite all their considerable, though not superlative, skill as bushmen they could never get me one, dead or alive. I left the New Hebrides without this bird, the only omission from my list; I must have heard hundreds. The increase of dogs got from white men, also cats, has reduced its number lately, as with several other ground birds, the Coot (*Porphyrio*) and the very rare new mountain dove discovered by me. Some birds may not be eaten, locally or generally; others are omens. The moustached honey-eater (*Guadalcanaria*) is a bird with a beautiful whistling song at dawn, very common on the plateau, and tabu to women. The harrier (*Circus*) may only be eaten or cooked away from the village. The red-crowned dove (*Ptilinopus greyi*) is an omen of death when it calls at night, as is the scarlet honey-eater (*Myzomela*) under the same circumstances. The chestnut cuckoo (*Cacomatis*) is very common here; it must be always shot by a war party if it whistles on their path.

Fish and shellfish, which form an important and valuable diet item among the coastal tribes, do not feature much in Big Nambas eating. There never has been a village by the sea in this area except at Matano. Matano was not Big Nambas, but apparently of the South-West Bay stock, people with rafts, not canoes. A part of the village is said to have been drowned by an inrush of the salt water up a vent to well above sea-level; there is a typical long story of how and why this occurred, with supernatural frills. Some hardwood posts still stand at one corner of this extensive shallow lake, teeming with wildfowl and regarded with awe by the natives, who say that a great shark came up the vent and lives there to this day. A part of the village escaped, and was driven out much later by Amok; several survivors are living at Matanavat, on the coast of the Small Nambas area. Until this occurred the central villages had no outlet to the sea, except rarely, by paying pigs for the right to pass down through another village's land. They lived within 5 miles of the sea; they saw the sea every day. They did not reach it. This had an important effect on the central culture, and noticeably on their attitude to ships and white men. The Amok people are real "man-bush" and are referred to as such by their neighbours. The mental impact of the white man has been practically nil; they remain truly primitive minded, and dangerous in the old Hebridean way —the way that killed scores of traders, blackbirders, missionaries, planters, and beachcombers, none of whom have even yet cared or dared to live on this coast, near to this last flicker of what was once a fiery furnace.

The coast is partly rock and dead coral, partly fine white sand with protective reef. Each sand beach is the property of a village; some beaches are

divided between two or three. One group will not go on the other's beach; during times of war one may see hostile parties camped a hundred yards apart. Regular expeditions in search of shellfish occur at certain seasons; strict regulations, especially sexual, control these, and some of the visits are associated with esoteric rites. The Big Nambas do not have, as far as I know, any method of catching fish. Prawns are speared on small forked sticks, often by the children. The absence of canoes has had interesting effects, and gives rise to interesting ideas about the Big Nambas. They have an undoubtedly "high" form of culture, in some respects the highest (from the point of view of current conceptions in Pacific anthropology) in the northern New Hebrides. There is evidence that some of the elaborate social organization features in the Atchin group of islets, which have an undoubtedly late origin, have been derived direct from this area. The Big Nambas mythology and the chiefly system is closely allied to that found in Polynesia, and attributed to the latest "migration," the Tangaroans (*cf.* Williamson, for summary). The language is strongly Melanesian; skulls like inland Fijians. One wonders how these traits got here, or rather got here in the way necessary to suit the white man's theories. There must have been a large measure of internal development and local spread and of random influence in several directions over a much wider sphere; I hope that the forthcoming publications of Layard and myself will throw new light on a field which needs new illumination.

The Big Nambas use more and larger red mats than any other people. Some of these mats are, when uncoiled, 30 yards long. Yet they are entirely dependent for the red colour fixative—a leaf called *nese*—on supplies brought by the canoe people of Matanavat, who trade the shell money they make (the men make it, whereas elsewhere it is woman's work) to Malo island, where this currency features prominently in graded society rites. The Maloites take pigs to Tangoa islet off south-west Santo, where the leaf grows in profusion. In return for the leaf, the Big Nambas give the Matanavatese re-entrant tusker pigs (*i.e.* tusks more than one complete circle); these are of supreme importance in the Malekula coastal culture, but are not used inland in the north. The red mat culture has a limited distribution, and is absent from Santo; it has spread widely within recent times, perhaps from Omba, and reached coastal Malekula several hundred years ago; it has reached a maximum in the Big Nambas, despite the absence of local colour supply. Mat designs are necessarily angular: so are most Big Nambas art forms, a conventionalized hawk and face the commonest. Curvilinear design is rare, rarer than coastally, where it is important. Representative carving is similarly scarce inland; I have not seen a spiral.

I have mentioned the unusual clothes of Big Nambas women. It is difficult for the male observer to find out much about female life, which is lived so much apart from the men; the marked jealousy of Malekula men is another obstacle. But after a while I was able to get fairly intimate with a few women, including the wives of the chiefs with whom I lived. They are as unusual as their clothes; wild-minded, simple, and determined, more excitable and inquisitive than their men. I could never quite decide why their eyes always appear so large, the whites so exceedingly shining; it was not only the contrast with their very dirty faces. A Big Nambas woman is almost comically queer

looking when she peers out from the long red threads of her headdress, pulled over her face at the approach of a stranger, who passes her as she crouches in the jungle at the edge of the path. Work is the woman's first duty; yet she manages to be a good mother to a daughter, and during infancy to a son. She is responsible for most of the work in the yam gardens; cutting and carrying firewood is entirely her affair, and a big job. The weights carried are considerable; sometimes I have been unable to lift a woman's load to my back—the traditional carrying position. Marriage is an exchange of pigs without noticeable ceremonial; childbirth is a more elaborate affair, though the mother is not spared long from her domestic duties. Menstruation is not regarded with such distaste and fear as in many tribes; the strongest menstruation tabus are associated with matrilineal peoples. The first duty of a wife is to her husband's pigs. Indeed I have seen piglets suckled by lactating women; planters have told me that this is also not uncommon on Ambrym. All Hebridean women are self-conscious in the extreme, infuriatingly giggly in the face of anything strange: otherwise I should say that they are much the same as other women. They are averagely sexual. Unlike most parts of Malekula the women here have no graded society. The only privilege of a good wife is to have her two top front teeth taken out.

Marriages may easily be broken up, because the woman can always run away to her home village if her husband becomes intolerable. He will demand the return of her, or of the pigs he paid to her relations when he bought her. If it is apparent that she has been misused, her family will probably refuse any sort of recompense. The chief is technically the owner of all women, controller of marriages, and owner of the pigs paid out. He is therefore involved, and so is his ever-ready pride: and from this situation war often results. It is quite common for girls to be sold again, at once or several times, by greedy parents; or one village will deliberately sell to the chief of another, and the woman return next day to her home. I have said that traditional feuds are the basis of all wars; I might add that women are the basis of all feuds, a condition not peculiar to the Big Nambas. One cannot legitimately criticize the overweening village pride and public school spirit, for it is the root of their life, has enabled them to survive where so many have gone under; but one must get annoyed sometimes with the petty damaging consequences. In the pre-white days, though, it did not matter: they had no guns; there was a teeming vital population. War was a game with rules, without cheating.

I was present during the various phases of an important ceremony, which turned out to be significant in the above respects. This was the marriage of the eldest daughter of the chief of Tonmaru, Ringapat, Miss Cheesman's friend. A chief has special duties to his firstborn male and female children both before and after their marriages. Like most females, the daughter was married while yet a child, age about nine (the marriage is not consummated until age about fourteen). The young son of a lesser chief from Tinambit was the bridegroom, a boy of eleven. The final stage in the affair was two days of dancing, leading up to the pig exchange. Like all Big Nambas dances that I have seen, these ones were of Na-leng type; only one sex danced at the same place and day. The movements were all perfectly synchronized by a highly trained chorus, decorated with bright leaves and magnificent feather head-

dress, bodies painted vivid black and red shining with coconut oil. In four ranks of intricately moving muscle, to the accompaniment of chants and tapped sticks, they go through a long series of actions clearly symbolic of the future sex life of the couple. The women dance on the following day, sitting and crouching as they chant an erotic, almost interminable chant about the family history of the bride and her innumerable relatives, virtues, blue-bloodedness. All this went off very well at Tonmaru until it was time for the Tinambit folk to bring over their pigs. The bride price demanded by Ringapat had been fifty tuskers; Lorambit of Tinambit had insisted that in these hard times it was impossible to offer more than forty; such a price was hardly enough to satisfy a proud father. But Ringapat had already given his second son to childless Lorambit as his heir, in order to cement an alliance between these two powerful villages against the mighty Amok and its possible confederates. He was anxious to avoid offending Lorambit, and so causing the break-up of an arrangement advantageous to his family. He therefore accepted. At the appointed time of midday on the big dancing ground, all the Tonmaru men "lined up"; no one came from Tinambit; no one came at all until late afternoon. Then a mere handful of Tinambit men appeared, bringing a mere handful of Tinambit pigs. That was all; perhaps thirty low-grade pigs. It was a direct and deliberate insult to Ringapat. It looked for a few moments as if Tonmaru would take the law into their own hands and do some shooting on the spot. Danger accumulates slowly here: Tinambit got away with it for the time being. Lorambit had the satisfaction of knowing that he had made Ringapat lose a very big slice of "face"; and before the white man too, with whom he had always put on so many airs, as self-appointed "King of the Big Nambas." That he had destroyed incidentally a valuable alliance formed with much intrigue did not bother Lorambit a blow.

If I have seemed at any point in this paper to think that all natives are the same, it has been unintentional. They are very much not. In most areas some individuals, especially epileptics and abnormals (*cf.* Layard, 1929), can have a big effect on society, though it is comparatively seldom lasting; in the Big Nambas the variation from the high standard of normalcy is centred in the chiefs; the character, even the slightest passing whim, of these men can have far-reaching effects on many departments of life in his own and other villages, and in the adjacent tribes. It would be impossible to understand numerous aspects of tribal behaviour and organization without a direct knowledge of this; my own knowledge is far from adequate. When there was a thriving population such wasteful incidents did not matter. Now they do. I have already regretted the new habit of killing chiefs and the evil results; but there is a good deal to be said for the man who makes the wars being involved in them, and I admit that there are times when I would have liked to remove nearly all the chiefs; they are so blind to the consequences of the old behaviour under new conditions. That is the problem. One can't have it both ways. The old order seems doomed either to be altered or annihilated.

They have some interesting stories of the first arrivals of white men in the least-known areas. The first white man's ship came to steal labourers. Not long after they found on the sand beach a white man's foot. There was much rejoicing at so facile a revenge; the usual cannibal rites, night dance, and oven

cooking followed. When they took the foot out in the morning it was still so tough that no one could eat it. Every cooking method was tried. The foot was too tough. Finally they gave up in despair; the white man was indeed doubly marvellous, both for the smoke that came out of his mouth and for his skin. It was not until long after, when they made closer contact, that they found their foot was only a shoe, which wasn't the same thing. There are also much older legends of white people called *tamererunse*, long-haired cave dwellers who come out only in the rain, when they speared babies on their incredibly long finger-nails, and ate them raw. The last *tamererunse* is said to have been killed by the cunning of a Levenbish man a few years ago. Similar legendary whites feature in mythology widely, and are known as *Ambat* in many parts of Malekula (*cf.* Deacon, 1934). Pigmies, sometimes minutely small, are similarly widespread in legend, and there is little doubt that they were once so distributed in fact. Marked pigmy strains occur in north and central Malekula; in Big Nambas especially at Tinambit, and in the neighbouring Middle Nambas village Potermul.

From the first the natives have, I think, felt a certain respect for the white. His ships, his iron, firearms, tobacco, alcohol, gained him the reputation of cleverness and great material wealth—the first Malekulan virtue! This sneaking regard, tempered sometimes with a little fear, has survived all the beastliness of the last hundred years' civilization impact. The black is still prepared to like a white if he can show himself to be a fairly decent fellow; and in their judgment of character and behaviour the native standard is not remote from our own. A white will not again be attacked unprovoked, and the sins of one are no longer visited on the next of the same colour, as they would be in their own case. In fact certain of their ideas are altered, rules softened, for the white, though for themselves the old rigidity remains. There are also special sins allowed to those who go to work on plantations, *e.g.* eating at the same fire as women, cutting yam with a knife, associating with men of enemy villages; on his return to his home the man will have to kill a pig for absolution. A fair number of young men go to work on plantations for one or more years. They live for a while in the calico phase, with rice, hard dull meaningless work, the plantation prostitutes (probably from Omba) and a pound a month. The pound is turned into pig; for this purpose the whites have standardized the value of a circle-tusker at about £12. This should be one year's work; but the youth is always encouraged to get things on credit at the plantation store and thus to enter into a vicious circle of desire and debt. Cruelty is rare; it pays the planter to treat his workmen well, for then he can get others to come without difficulty; the debt racket can hardly be called an abuse among a native race whose dynamic life depends on debt more than anything else. Bullets are also an inducement; chiefs send so many men each year to work for ammunition. In the case of rifle bullets this is against the law; during the period of my activities in this area shot cartridges were made illegal too. But the Condominium provides no mechanism for effectively enforcing its numerous laws, as I learnt by my own hopeless attempts to see some justice done. The worst abuse in Malekula and all over the Group is in the recruiting of female labour for plantations on Santo, Malo, and Aore. Planters say that they can get no male labour unless they have free women on

the place. Some of them stop at nothing to get this bait; the British are fairly closely watched by the government, a fact of which they complain bitterly; but even when they do cheat, the British seem to be incapable of very dirty tricks. I found illegal recruiting to be a serious factor in causing inter-native troubles and assisting depopulation. Married women are taken without their husbands, and if returned are returned to another place or island, perhaps to an enemy village, the planter having made one or several natives sign on another year's work to get the woman for wife. I was able to get new laws put through during my stay, but it did very little good, partly because of absurd confusion in the geographical definitions of the regulations. There is a growing discontent among all sections of the natives, and this feeling extends towards a government that protects the white against the black, in some islands even the black against his fellow black, but gives no sort of protection against the white. Far away down in Vila, the capital, there is a native advocate, whose paid duty it is to guard the natives against injustice and to protect them in the courts. During my stay in the Group this important post was held by the official who also had the important job of prosecuting in the same court where he was defending. If this sounds difficult, I can only say that it is a difficulty encountered in many parts of the Condominium machine, and overcome (on paper).

A rather significant episode happened in 1934, which is interesting from the anthropological and humane points of view. The village of Malua, near the sea above Malua Bay, on the north-west coast, with an interesting culture because transitional between Big and Middle Nambas and the Matanavat coastal group, was completely vacated to Malo and Aore islands. I put this on record as a typical example of what is happening in the New Hebrides to-day on the fiercer lines of impact between race, tribe, faith, and economic interest. Some years ago the Seventh Day Adventist mission, which came last into the Group and usually went only on to ground occupied by other missions, decided to try its hand at some real heathens, as all the other missions had done in the first place. West Malekula was chosen. Stations were established at different places along the coast; at Matanavat, Wowo Tonmeal, Espiegles Bay, Malua Bay, Tonmaru beach, and Botawi (the Levenbish village beach). A lot of money was spent on teachers, houses, two white missionaries, shirts, etc. The Big Nambas did not respond at all, and their missionary soon died of blackwater fever. But the more northerly people showed some interest; in the easy native way they adopted outwardly a faith that was in many respects almost identical with their own. Bad bushmen made use of this cover to carry on intrigues, killings, and the passing of heathen women to recruiting vessels; and because the mission had no experience and the missionary no qualification to deal with these difficult people, a chaos resulted. In controlled areas the missions can carry on under such circumstances; here they could not. The heathen villages started sitting up on the hills around Malua, taking pot shots at the alleged Christians; several were killed; the mission gave up; the hundred or more people left in it were in terror. Making use of their miserable mental condition, planters urged them to come away from wicked Malekula to peaceful planted lands. One boat got some to come; in a few days, and with the assistance of some judicious false rumours and

alleged threats from the bushmen, three or four planters had removed the whole population. Where a big village had thrived for years there was now no human being; the house and gardens were soon blotted out by Potermul, who had a grand time cutting and burning, a process happily synchronizing with a particular esoteric period of theirs in which this type of vandalism was necessary. But the Malua people survived; survived on foreign ground, lacking in all the important background of ownership, legend, and intimate association; ground given to them by their planters, at the interest rate of two days' work per week for every adult male, cutting copra, no wages. When I left the Group these natives were getting tired of their new utopia, they were beginning to steal, strike, and die faster than usual from the various diseases prevalent wherever there are many whites. Indeed they were becoming a nuisance to their benefactors; a movement was growing to put them back on Malekula and leave them to be eaten in peace. The whole affair could not have happened in any ordinary governed country. It has upset the whole culture of the Middle Nambas area, which depends on a certain number of clans, on repaying pig-debts, magicians, inter-marriages. One could easily forgive that, if some medical good or any sort of advantage to the people had resulted; four Frenchmen are the richer by a few tons of copra, of course. Exactly the same thing happened to Espiegles Bay, where for many months after the beach was decorated by corpses just above high-water mark. The Tonmeal settlement was only saved from the same fate by my appointment as an official, when I kept a section of my terrified but well-armed native police at Tonmeal as protection. The Botawi mission station had been abandoned some months before, after gallant efforts by the truly Christian Marsing, who stuck on months alone in this waterless, desolate spot, surrounded by hostile and threatening people.

In this place I must record my admiration for the other missionary on the coast; he too was a Christian man, a Presbyterian native teacher called Apon. His station was at Liviamb, which he started himself; and within a surprisingly short time began to gain converts. I did not approve of Apon's activities in the mental sphere, and particularly in the way he tried to get bushmen to come down from their healthy hills and live by the sea in this desolate, fever-infested spot; but he was only obeying the orders of his mission, in which it is necessary to live by the sea if you would be a Christian. As a man and a friend I doubt if I shall meet a finer person. He was of invaluable assistance to me, as guide, adviser interpreter, in my first visits to the southern Big Nambas; he was fully aware that things could not go on as they were then going. When I was ordered by the Administration to attempt pacification of the area by peaceful means, he gave me the fullest and most daring support. We were two impotent, impudent microcosms; we could influence to some extent the smaller villages who also knew more of the white man's ultimate power. But the great bush-village Amok thought we were just a good joke; they told us so; after tolerating our interference for a while told us also that they would eat us. Ontowalo also got fed up. My job finished, but Apon stayed on to make all these men friends and brothers. Soon after I left they ate him.

The last relic of the great Melanesian race rots away. Nobody cares.

Civilization has brought these people low, with its twin curses, disease and guns. There are two hospitals, highly paid doctors, nun-nurses, fully equipped missions of three denominations (with ten white missionaries), three government officers and police units, two wireless stations—all within a few hours' run on any one of the fifty or sixty motor launches and cutters available for the purpose; the maximum journey across open sea 10 miles, a voyage made every day by some canoe, recruiting or trading ship out in its own interest. Nothing is done to help the most interesting, in many ways the most admirable, people left in the Pacific. These men and women have all their old zest and vigour, all the will to live, their old enthusiasm and dogmatic pride. It is only the material aspects of "civilization" that have tainted them; the savage mind remains. The savage mind has no remedy for whooping cough, which killed more than six hundred Big Nambas in 1932; nor for influenza, which scored about a hundred dead in 1934.

It is lucky for the careless and complacent whites in the New Hebrides that there is an infinitude of tribes, sub-divided into villages, and often sub-villages, each with its own chief or chiefs, no one of whom acknowledges the authority of any other. If one man arose who could weld together even a part of the potential armed native power, directed towards the goal that each non-cooperating individual seeks, things would go very differently in these remote islands. The combined Big Nambas alone could still be really formidable.

I thank my colleagues of the early part of the expedition, already reported on by John Baker (*Journal*, vol. 85, p. 209), and especially Jock Marshall, for their company. For other help Zita Baker, John Layard, and Professor Levy-Bruhl. On two journeys in Malekula I was accompanied by Lindsay Macmillan; I was very glad to have him work with me. I have received information from Rev. C. Nottage, Rev. John Gillen, and Pastor Peacock. I thank the many missionaries who were good to me, especially Rev. W. Anderson and Père Bancarel. And several planters, including Mat Wells, E. Corlette, J. Fleming, E. Lançon, J. Robertson, and C. Dupertuis. Capt. Cosmo Graham and his officers of H.M.S. *Diomede* brought me help and kindness at a useful moment; Douglas Fairbanks, senr., put his yacht *Caroline* at my disposal.

My map of south Malekula, and photographs of the long-headed and fibre-skirt people there, will probably be published in the October number of the *Journal*.

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DISCUSSION

Before the paper the PRESIDENT (Major-General Sir PERCY COX) said: The paper to-night is entitled "Living with the People of Malekula," and it is by Mr. T. H. Harrisson. You will remember that Mr. Harrisson has been on this platform on a previous occasion. He was a member of the Oxford University Expedition to Sarawak in 1932–33, and it was he who read us the paper on the work of that expedition, a paper of extraordinary interest. Soon after that expedition Mr. Harrisson went with Dr. Baker to Malekula, and you will remember hearing Dr. and Mrs. Baker describe their doings, Mrs. Baker having had a most interesting story to tell of her experience as a woman among the women of Malekula. It is, I think, generally realized that a woman can do much more than a man in contact with such absolutely unsophisticated communities, in that she is able to get into touch with the women to an extent which the man explorer can never do.

When Dr. and Mrs. Baker returned to England, Mr. Harrisson remained in the New Hebrides by himself, and has thus been away for over two years. It is a great achievement. The climate is a terribly difficult one for the white man, blackwater fever being almost universal, so that if one remains in the country long enough one is almost sure to get it. Mr. Harrisson has been exceedingly lucky in escaping it.

The tale he has now to tell us of his life among the people of Malekula, mainly spent on anthropological research, is of extraordinary interest, and you will, I know, appreciate the lecture which I now ask him to deliver.

Mr. Harrisson then read the paper printed above, and a discussion followed.

The PRESIDENT: We have with us this evening Mr. Guthmann, a Frenchman whom Mr. Harrisson met in Malekula. We should be very pleased if he would make some observations.

Mr. A. GUTHMANN: Ladies and Gentlemen, When I visited Mr. Harrisson in 1934 I found him in rather a pitiful state—bearded and barefooted, a kind of bushman. There was moreover a big difference between his outfit and mine. My object was to study the people from the point of view of a writer; he was a scientist. When we went on to the mountains he used to play gramophone records of Igor Stravinsky and he used to get up a kind of frenzy. I used to play Mozart. Harrisson's success with the natives was really a matter of assimilation rather than anything else.

I was endeavouring to find a kind of poetical contact with them. When one has an inspiration one has a kind of feeling that one understands everybody; there is a sense of one-ness with everything, including human beings. I tried to find that contact with those primitive peoples or to make a compromise, but I failed. I could never feel sympathy with anything connected with those people. Harrisson lived as they did and took life as it was, and thus he came to understand them, to be, as it were, initiated. In fact, I think he knows much more about them than he has told us. Anyhow, I have been interested in what I have heard, and I am pleased to see Harrisson in a civilized state once more.

The PRESIDENT: I hope Mr. John Layard will add to the discussion. He was on Malekula before the war. He has for many years studied the people of the

New Hebrides, their language and their habits. Perhaps he will tell us something of his experience in Malekula.

Mr. JOHN LAYARD: Mr. President, My Lords, Ladies and Gentlemen, I should like to express the very great pleasure I have experienced in listening to Mr. Harrisson's account. He is the only white man, beside myself, who, so far as I know, has spoken the language of these people, danced their dances and lived in their houses with them.

He went to the New Hebrides as an ornithologist, knowing nothing about anthropology, and he has returned knowing more about the natives than most anthropologists. I can assure you that he could supplement his brief account given to-night with many pregnant scientific observations.

He has asked me to show a few slides of some of the dances performed on the small island of Atchin off the north-east coast of Malekula. I was one of those who remained on the coast and was too busy collecting information there to go into the interior as Mr. Harrisson did.

One of the principal types of dance on Atchin is that called Na-leng, of which there are two kinds: formal square dances and pantomimes. The stone monuments Mr. Harrisson showed on the screen form part of a protracted ritual act which symbolizes among other things the journey of the dead man to the next world, during the course of which these dances are performed. In the formal square dance shown on the screen there is a figure representing a hawk which Mr. Harrisson mentioned as illustrating the idea the native has as to his ritual life being a series of steps in which he soars higher and higher.

Besides the chief solo dancer, there is a central body of dancers who dance also as birds, with their hands spread wide to represent wings. The solo dancer represents a hawk pouncing on its prey. He finally dances into the midst of the main body of dancers, who cower down, as if they were a crowd of birds in dismay. When taking part in these plays the natives wear on their feet ankle-rattles similar to Morris bells.

Besides these square dances the natives enact pantomimes, during the course of which they display a highly dramatic sense. They have some plays which are serious and somewhat similar to our own mumming plays. Serious drama as well as amusing burlesque.

In these all the characters represent ghosts: that is to say, spirits of mythical ancestors. Another slide shows a native with his arms outstretched, again representing a hawk. He has ankle-rattles on his feet and in addition wears a grass skirt and a mask, both of which features indicate according to native convention that he represents a ghost. Crowning the mask is a long pole on the top of which is the modelled image of a bird.

There are various kinds of dances connected with initiation. Each young boy on being initiated has an older boy or young man who looks after him, helps him through all his difficulties and teaches him how to do the things he has to do. The last slide represents the procession in which the boys are being led into the lodge specially constructed for them.

The PRESIDENT: We have with us Dr. Balfour, who is one of our most distinguished anthropologists and Curator of the Pitt Rivers Museum at Oxford.

Professor H. BALFOUR: Ladies and Gentlemen, I did not expect to be called upon to say any words on this occasion, and I have to confess, at the outset, that I have never been on the island of Malekula and was never in the New Hebrides. The advantage I possibly derive from that fact is that I can approach the subject with an unbiased mind. That is my only excuse for saying anything at all.

I would like to congratulate Mr. Harrisson on a very noteworthy success.

It is highly creditable to him that he was able to forgo ordinary comfort and to become, to all intents and purposes, for the time being a native: to live the life of the natives in their own way, and to suppress the European tendencies and the craving for those "necessities" which we look upon as essential. It is true, as he has said, that if you want to enter into the spirit of native life, you must enter into it literally and live amongst them as they live, following their rules and in general conforming with their own methods. I very heartily indeed congratulate Mr. Harrisson on the success with which he achieved this somewhat difficult and decidedly uncomfortable proceeding.

There is very little I can say that will add to what Mr. Harrisson has already told us. He speaks from first-hand knowledge, of course. I do not in this case. I might however just touch upon one or two of the points he raised.

One of his first slides showed that remarkable fashion of artificially deforming the skull, a fashion one would look upon as about as unlikely as any fashion that ever has arisen. To tamper with the brain-box, so to speak, would seem to be a dangerous procedure, and yet it is a world-wide practice. It is known in a great many parts of the Old World and over a great extent of the New World; even in Europe not so very long ago it was the practice to deform the skull artificially. Certainly eighty years ago it was the custom in many parts of France, in Toulouse, Normandy, and elsewhere, to ligature the head of a child so that it would only grow up into a long "sugar-loaf" shape. That was done within the memory of living people and in highly civilized surroundings.

It has often been argued that such a distortion of the cranium must necessarily lead to a degeneration of the intellect. A good deal of work was done in France in connection with this practice, and it was found that there was, to some extent, a greater degree of low mentality amongst those peoples whose heads were artificially distorted; but in regard to those whom we habitually call savages—I think that is a wrong name—it appears to be somewhat different, and I doubt very much whether the practice of artificial cranial deformation has any marked effect upon the intellect of the people. It is a significant fact perhaps that Reinhold Forster, who was a naturalist who went with Captain Cook during one of his voyages, happened to remark, without any reference to this habit, that of all the people of the South Pacific with whom the expedition had come into contact the Malekulans were the most intelligent. So that this practice, at any rate amongst the primitive peoples, would not appear to have any marked effect upon their intellectual capacity.

Another subject touched upon was that of cannibalism, which is still prevalent, as Mr. Harrisson has told us, in Malekula. But I gather from him that the practice is, if not entirely at any rate mainly, of a ritualistic character, and though it may be temerity on my part I would urge that there is something to be said for cannibalism so long as it is ritualistic, because at any rate it can be urged that, since the main idea of cannibalism under those circumstances is to acquire certain attributes of the dead person, at least it is paying a compliment to the deceased to endeavour to acquire, by a somewhat literal process of absorption, it is true, those virtues or the prowess with which the deceased is credited. So after all there is something to be said for that aspect of cannibalism. At the same time I do not want you to go away feeling that I hold a brief for cannibalism. I do not. But one can sympathize to a certain extent with the native point of view.

Old age tends to become garrulous and I must not hold the meeting up any longer, but I would again like to congratulate Mr. Harrisson on having led a purely native life and on having penetrated into the inner life of the people. It is true that he had a certain amount of experience before he went to Malekula. He had been in Borneo and done much the same thing. He lived with the people.

The PRESIDENT: Dr. Baker, I hope you will come up on to the platform.

You will remember Dr. Baker's lecture on the same region two years ago. He is now lecturer in biology and comparative anatomy at Oxford.

Dr. BAKER: Mr. President, My Lords, Ladies and Gentlemen, I think there is no possible doubt that our lecturer to-night has seen more of the savage—if I may use that word—tribes of the New Hebrides than any European has ever seen, and also he has more fully entered into their life than any one else ever has.

The point I specially want to make in that connection is that he has tried to study and get a real idea of primitive life. That is a very old-fashioned thing to do, apparently, because nowadays in social anthropology what one studies is the clash of cultures. One notices what happens when the white man comes along: how the native takes to riding bicycles; how he takes to new things and adapts himself to the new life. That is, no doubt, of enormous importance politically, but I would suggest that the study of primitive man living his primitive life is of far more fundamental significance. That is a study which is dying out, mainly because there are so few people left in the world who are still living primitive lives. Probably the people of Malekula and certain other islands of the New Hebrides approximate as closely to that as any other peoples in the world, with the exception of the people in the centre of New Guinea. There appears to be no doubt that the people in the centre of New Guinea are people without white influence of any sort.

I do not know whether I am allowed to say that Mr. Harrisson has regarded his expedition in Malekula as, in a way, a training for even more serious and more difficult work in the centre of New Guinea. I hope this Society will give every support to what will be, I am sure, a very important piece of exploration and anthropological research.

The PRESIDENT: Well, ladies and gentlemen, we have had an interesting discussion. It is extraordinary to see how well Mr. Harrisson has come through that ordeal of two years under those extremely primitive conditions of life. It goes without saying that it has been a very valuable and unique experience.

Dr. Baker has expressed the hope, which I support and endorse, that Mr. Harrisson, fired by his great success on this occasion and by his extraordinarily fortunate escape from serious illness, will be able to contemplate further attempts to understand the primitives of those out-of-the-way islands.

For one who has never been in touch with anything of the sort it is a most difficult problem to form an opinion as to how far we are justified in giving this contact with the civilization of primitive people encouragement: whether we should do our best to preserve these relics of the Stone Age, or whether it is our duty to cure the natives of their primitive mode of life. It is a problem I cannot attempt to dilate upon. But I do ask you now to join me in congratulating Mr. Harrisson on having made this wonderful study of those savage people, that we have seen portrayed on the screen and on having come through it so well, and in thanking him for giving us such a delightful account of his experiences.

The approval of the audience was signified by hearty applause.

A JOURNEY THROUGH CENTRAL ASIA: *A paper read at the Evening Meeting of the Society on 30 March 1936, by*

PETER FLEMING

LAST year, like many others before me, I had the good fortune to travel overland from China to India. Since Mr. Owen Lattimore made his remarkable journey in 1926–27 certain developments in the political situation have added to the difficulties of the journey. When Mlle. Maillart and I left Peking for India we did not seriously expect to get through, and for the first four months of the journey, which took seven months altogether, we were travelling blind; that is to say, we were no more able than we had been in Peking to estimate our chances of eventual success. During those four months there was always a strong possibility that we should have, sooner or later, to turn back, and there was also, I suppose, a vague possibility of some even more unpleasant eventuality. Though whether any eventuality could have been more unpleasant I rather doubt. Personally I came to regard the prospect of retracing our steps through such desolate country as one of those contingencies which the novelists class as "a fate worse than death."

Politics were an all-important factor in our journey, and unless I say something about them the whole story loses its point. Only a very well-equipped expedition can reach India from China through the barren, almost uninhabited uplands of Northern Tibet. For travellers and merchants the only practicable route is by one of the great trade roads through the Chinese province of Sinkiang or Chinese Turkistan, either along the south of the Takla Makan desert or along the north, the way that Sir Eric Teichman travelled when he left Peking for India last September. It is also the route by which Marco Polo went to China, and the way the Chinese Buddhist pilgrims came to India. For centuries it was the only route over which commerce and culture flowed to and fro between East and West. To-day, of course, trade goes by sea, and Sinkiang is a very much less important place. It is also, curiously enough, less accessible.

I do not propose to go very deeply into the turbid recent history of the province of Sinkiang. Briefly, what has happened is this. In 1928 the governor, General Yang Tseng-hain, was assassinated at a banquet. (Sinkiang has rather curious traditions of hospitality, and most of the first-class assassinations take place at banquets.) Since his installation after the Chinese rebellion in 1911 Yang had ruled the province firmly. His successor was Chin Shu-jen, an official whose rapacity was insufficiently supported by administrative talent and who is now serving three and a half years in a Nanking gaol. Chin's place was taken by the present *tupan* or governor, General Sheng Shih-tsai. Sheng was originally a commander in the North Manchurian forces, and in 1932 he and his troops were driven out of Manchuria into Siberia by the pressure of the Japanese invasion. The Russians interned them with full military honours, and in 1933 they appeared again on Chinese soil at Urumchi, where, with Soviet Government support, Sheng Shih-tsai seized power and contracted a secret loan with the Soviet Government, a strictly unconstitutional procedure on the part of a provincial governor.

At the time of Sheng's reappearance a Tungan invasion from North-West China had precipitated a civil war which ravaged the province for two years. The Tungans are Moslem Chinese who originally had an infusion of Turki blood; they speak Chinese and think Chinese, and for practical purposes differ chiefly in that they are much better fighters than the majority of their compatriots. During the civil war everybody changed sides with bewildering rapidity and the province was as full of sudden rivalries and sudden reconciliations as the last act of a Shakespearean tragedy. Perhaps the most remarkable event during this confused period was the relief of the capital, Urumchi, by a force of Soviet Russian troops supported by aeroplanes, armoured cars, and possibly light tanks. These troops took the besieging Tungans in the rear and eventually routed them. They thus saved the cause of the Provincial Government, who from then on became even more completely the puppets of the Soviet Union.

In these days I imagine it is a fairly unusual procedure for the military forces of one Power to engage in warfare on territory belonging to another Power without either government saying anything to the other before or after the event; but the Russians got away with it pretty well, chiefly by dint of locking up all tale-bearers inside the province and doing their utmost to prevent tale-bearers getting into the province from outside. When we left Peking two Germans and a Swede, the only non-Russian, non-missionary foreigners resident in Urumchi, had been causelessly imprisoned there without trial for over a year; and of those who had tried to go into the province from outside one, a young German, had been murdered (though not by Soviet agents) near Hami; another, an Italian who arrived from Mongolia, had been arrested and sent out of the province. Even Dr. Sven Hedin, whose "face" is great in those parts and who had just concluded a road-surveying mission for the Nanking Government, had had his lorry commandeered by the Tungans and had been treated with great suspicion by the provincial authorities. It was in fact obvious that with Soviet influence astride the two main routes into the province we should be lucky if we got into Sinkiang and luckier, perhaps, if we got out. In the circumstances our only course was to make a flank march which would bring us to the one part of the province which rumour in Peking said was not completely under Soviet influence, namely, the string of oases lying to the south of the Takla Makan desert; in this area the rebel Tungan armies, who had so nearly taken Urumchi, were said to be firmly established. The Tungans had, and still have, a bad reputation, but we reckoned that perhaps they would be glad to see two special correspondents who could air, in India and elsewhere, their grievances against the Russians and the provincial governments. At any rate, it seemed at that time as if our only chance of reaching India was to travel through Tungan territory. We found it therefore convenient to assume that the Tungans were not as black as they were painted.

In order to reach the southern oases without coming up against Russian influence the map showed that we must go to Lanchow and thence, instead of striking north-west towards Hami and Urumchi, travel on past the Koko Nor and across the Tsaidam basin, the floor of which is about 9000 feet above sea-level, and finally cross over the eastern ranges of the Altyn Tagh and drop down into Sinkiang.

We left Peking a party of four. We kept our plans secret. All we said was that we hoped to make a short shooting trip round the Koko Nor. We did not apply for passports for Sinkiang, which were obtainable only from the Central Government and which they were exceedingly reluctant to issue. Mlle. Ella Maillart, who accompanied me, was a Swiss lady who was acting as special correspondent for a Paris newspaper. An international at ski-ing, hockey, and sailing, her powers of endurance are considerable. On a previous journey she had tried to get through to Sinkiang from Russian Turkistan. Unfortunately the Soviet frontier guards on the passes of the Tien Shan did not see eye to eye with her in the matter, and she had to content herself with riding a camel across the Qizil Qum desert in December, which is not most girls' idea of a merry Christmas, but seemed to suit her well enough.

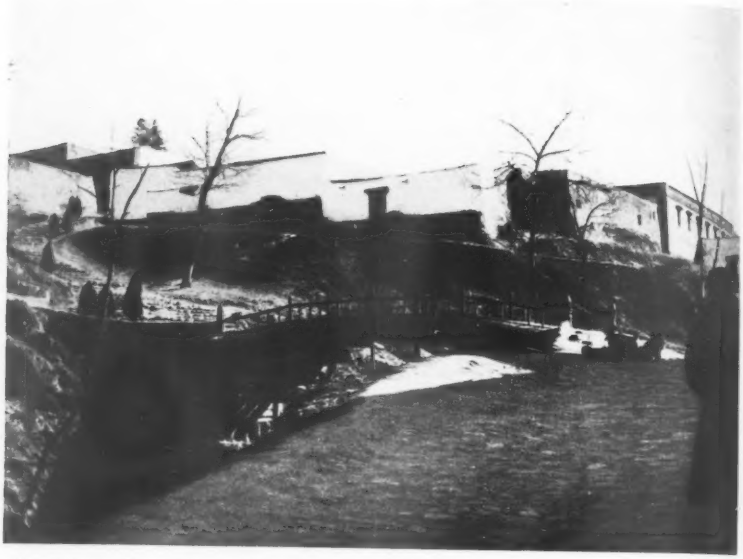
I really gate-crashed this expedition, because it was Mlle. Maillart who had already found the two guides who then appeared to be essential to our plan. They were a White Russian couple, Stepan Ivanovitch Smigunov, and his wife, Nina, who had lived and traded in the Tsaidam for several years and knew the country and the people well. They had been compelled to evacuate when the Moslem rebellion in Sinkiang overflowed into the Tsaidam in 1933, but they were very anxious to get back to their former home. We offered them their travelling expenses and they were glad to go with us. Smigunov spoke Mongol, Turki, and a certain amount of Chinese, and although they knew no European language except their own, Mlle. Maillart spoke fair Russian and I knew enough to get on with. We left Peking by the Peking–Hankow Railway at midnight on 15 February 1935. We had very little baggage with us. The chief items in the supplies we took from Peking were six bottles of brandy and Macaulay's 'History of England.' The train, which for no discoverable reason was called an express, brought us safely to Chengchow. Here we had to make a connection with the west-bound train on the Lunghai Railway. We had been warned that it was a point of honour on the Peking-Hankow line to miss this connection by a matter of minutes, and we found the tradition faithfully observed. We did not want to spend the night in Chengchow and eventually, in the small hours of the morning, after a brisk hand-to-hand engagement, we secured standing room in what was euphemistically called a third-class train, though I do not think live-stock would have rated it higher than eighth-class. It consisted of open-sided trucks of the type which during the war used to be labelled "40 men or 8 horses." I do not think there were any horses in our truck, although it was difficult to see, but I know that our arrival brought the passenger list up to seventy-two. The doors of the truck, like the detachable parts of so much public property in China, had been removed and we accordingly spent a rather cold and uncomfortable night.

All the next day we jolted slowly through the hills of Honan towards Shensi. It is loess country, yellow and dusty, and curiously terraced. It is supposed to be the original home of the Chinese race; the people live in caves rather than in houses. That evening, the second day of the journey, we reached the walled city of Tungkwan, where the train threw in its hand. We spent the night in an inn there, and reached Sian the next day.

Sian was at one time the capital of China. Inside the great walls we found

The walls of Lanchow

The compound of the Mission at Tangar: Mongols loading our camels for the Koko Nor



Kumbum: Lamas coming down from their living quarters to the temples on the other side of the ravine

Mlle. Maillart and the escort in the Pamirs

a great deal of activity, for the anti-Communist campaigns have conferred upon the city the doubtful blessing of strategic importance. General Chiang Kai-shek, the commander-in-chief of the Nanking armies, had recently visited Sian, and he and his wife had launched a campaign which is called the New Life Movement and aims at the social regeneration of China. Its laws with regard to public conduct are very strict, and I was twice "regenerated" by the police for smoking a pipe in the street.

In Sian we had the honour of an interview with the governor of the province of Shensi, General Shao Li-tze. He received us in his *yamen*, which is part of the palace to which the Empress Dowager fled after the Boxer rebellion and the siege of the legations in Peking.

The rest of the day was spent in making arrangements for a lorry in which to do the journey to Lanchow. Everything was fixed up remarkably quickly and that night I wrote in my diary: "We start to-morrow at 8," but I had been in China before and I added: "I don't think." The words proved particularly apt. The lorry arrived at the right time and although it appeared to be fully loaded we climbed on top with our luggage. This was at 8 o'clock in the morning; we finally left the city just before dusk. Our lorry happened to be one of a convoy of three, one of which carried freight belonging to a man who was heavily in debt; his creditors would not let him go until he had given them something on account. It was only by bringing official pressure to bear that we got started at all.

Progress during the next eight days was uncertain and irritating. Short of actually blowing up, the lorries suffered every possible form of mishap. They fell through bridges; ice on rivers which they were crossing collapsed beneath them; they got stuck in the mud; they had punctures. Finally, at the market town of Pingliang, the owner of the convoy informed us that we were held up indefinitely for repairs. Luckily another lorry appeared and we transferred to that and started again with the loss of only one day. I thought at the time that it was rather curious that so many people had come to see us off, but I soon discovered that they were not seeing us off at all: they were all coming too. We started with twenty-seven on board. At first all went well. The lorry was a good one and climbed the 9000-foot Liu Pan Shan passes easily. From the top we could see the naked, curiously terraced hills rolling for miles and miles; it was very desolate country. But the descent was not much fun. The road ran in a series of precipitous zigzags, and we had a dashing driver; it was a terrifying experience. The foreign engineers responsible for the construction of the road had impressed upon their Chinese subordinates the desirability of marking difficult or dangerous passages with the traffic signs such as we use in this country: "S" for a double bend, and so on. The Chinese clearly thought this a good idea, but their sign-vocabulary was weak, and at the difficult and dangerous passages they merely erected a board on which they painted an enormous exclamation mark.

At night we slept in very miserable inns. The four members of the expedition shared a room not much bigger than a large-sized wardrobe, sleeping accommodation being an unheated *k'ang*—a raised earthen dais underneath which a fire can be lit. The heating problem was a simple one: it resolved itself into a choice between being frozen and being asphyxiated. The days

were very long, and there were not many incidents. Once somebody started a fight, which was a very anti-social thing to do on top of a crowded lorry. In this unfortunate conflict Smigunov, the Russian, had to take the part of mediator, who is even more essential and usually more successful in China than in Europe. Once there was a bandit scare, but the bandits never appeared. The weather was mixed: sometimes it snowed, which was a nuisance; and sometimes it was fine, which was an even greater nuisance, because then we swallowed prodigious quantities of dust.

At last, on February 27, we reached Lanchow, the capital of Kansu, on the Yellow River. For days we had been looking forward to Lanchow as a haven of comfort and security, but we had a nasty shock when we got there. The city, as far as foreigners were concerned, was under martial law. There was a Bolshevist scare; Communist troops were attacking the province from the south, and Soviet influence was known to be established at Urumchi, to the north-west. All foreign travellers, and especially Russians, were suspect. The Smigunovs, who like many White Russians in China had adopted Chinese nationality, carried passports issued in Urumchi. This was a suspicious circumstance. For six days I spent my time going round the officials, protesting our innocence and flaunting my connection with the famous T'ai Wu Shih Pao, which is the Chinese name for the *Times* and means the Newspaper-for-the-Exalted-Apprehension-of Scholars. But I did no good, and on the sixth day I was informed by the chief of police that *Ma* and *Fu*, which meant Maillart and Fleming, could proceed, but that the Russians (although no charge was made against them) were to be sent back to the coast under open arrest. This was very bad luck indeed for the Smigunovs, whose chief hope of earning a decent livelihood lay in returning to the Tsaidam. It was also fairly bad luck for us. We had lost, at a single blow, our guides, our interpreters, and our chaperones. It did not then look as if we should get very much nearer India. Of the three languages which were essential if we were to get to the Sinkiang frontier, I spoke only a few words of Chinese. However we decided that we would have a shot at it. We hired three mules, put our luggage on them, and started off on the morning of March 6. As we followed the animals through the crowded sunlit streets towards the Yellow River a troop of cavalry, wearing black fur hats, came clattering round a corner. In their midst rode a prisoner, a burly European with a long fair beard. As he passed he looked up, saw us and said, in a tone of some disgust, "Caput !" On the whole it did not look as if it was going to be a very good tourist season in North-West China.

At the West Gate of Lanchow we said good-bye to the two Russians and the missionaries with whom we had been staying, and moved off up-river. At midday we stopped for lunch at a more than usually fairy-like temple where we ate the regulation meal of *kua mien*. Our meals for the next five days consisted of this substance, which is very good indeed: it is a kind of spaghetti, bought at the wayside for a few coppers, which you eat with a great deal of red pepper. At night we slept in squalid inns; but we were doing long stages of nearly 20 miles a day—sometimes more—mostly on foot, so that we were not particular about accommodation. On the second day out we crossed the Yellow River by ferry and struck up the valley of the Sining Ho. On the

swift-flowing waters of this river huge rafts made of goat-skins or ox-skins were being poled skilfully through the rapids, carrying hides and wool on the first stage of their tremendous journey from the Koko Nor to Tientsin. There was a certain amount of traffic on the road: caravans of donkeys carrying disproportionate loads, travellers of consequence in mule litters; provincial troops coming down from Sining, their officers riding on Tibetan ponies; occasionally a camel caravan. The peasants in these regions are incredibly poor. They appear to live largely on opium and suffer terribly from disease. But Maillart and I had both been inoculated against typhus in Peking with the essence of a great many lice, and we only suffered from bed-bugs. On the third day we crossed the Kansu–Chinghai frontier. The most sinister of the rumours we had heard in Lanchow had been that telegraphic instructions had been sent to the Kansu–Chinghai frontier to have us arrested there. It was therefore with some trepidation that we approached this formidable spot, but, as it turned out, there was nobody there to arrest us, so we went on. We were between 6000 and 7000 feet above sea-level, and though it was cold when we started before dawn it was pretty hot during the day-time. The journey from Lanchow to Sining is usually done in six stages, but we did it in five, doing thirteen hours on the road during the last two days of the journey; so we were very glad indeed to see the walls of Sining, the capital of Chinghai.

Personally I have not much liking for cities, and they certainly brought us little luck on this journey. The first thing the authorities at Sining did was to say that our passports were out of order—as indeed they were—and that we must not leave the town until further notice. The result was that we spent ten anxious days at Sining, playing patience and wandering round the streets. In Sining the Moslems are the most important element in the population.

Meanwhile there had been much telegraphing to Nanking and in the end it looked as if passports were going to be issued; at any rate we were told we could go to Kumbum, the great Tibetan monastery a short day's journey to the south-west, under escort. The escort provided by the authorities proved to be a defenceless old man in his early nineties. At Kumbum we were most kindly received by the lamas. We slept in warm, clean rooms in the lamasery, and Mlle. Maillart was a big success with the monks, of whom there are several thousands in the monastery. I have neither the time nor the learning to say much about Kumbum, except that it is a very curious and impressive place. The monastery, one of the richest and most powerful in Tibet, is sacred to the memory of Tsong Kapa who in the fourteenth century founded the Yellow Sect of lamas. He was from birth destined for the priesthood. When he reached the age of seven his mother cut off his hair with a view to his entering the priesthood. On the spot where the hair fell to the ground a sacred tree sprang up and every leaf of that tree is said to bear a sort of thumb-nail sketch of the Buddha. Whether this is true or not I cannot say, because there were no leaves on the tree when we visited the monastery

From Kumbum we walked over to Lusar, a small Chinese trading settlement next door to the monastery. Here we interviewed Ma Shin-teh, a rich Moslem merchant to whom we had been recommended by the Smigunovs. He kindly received us in a small but richly furnished room containing no less

than eight far from unanimous clocks, and promised to provide us with a guide for our journey into the Tsaidam. To this day I do not know how he understood what we were talking about, because at that time I knew only about six words of Chinese. When we returned to Sining, we were given a passport authorizing a short trip in the neighbourhood of the Koko Nor. We later discovered that it was the wrong sort of passport; but that, for once, did not matter. We wasted no time in leaving Sining for Tangar, the last Chinese village on the edge of the Tibetan plateau, which we reached, after a long day's journey, on the evening of March 21. There we had a big slice of luck, for we were greatly befriended by Mr. and Mrs. G. M. Urech, the local representatives of the China Inland Mission, who were the only foreigners in the place and who did everything in their power to help us.

At last, on March 28, four camels stalked into the mission compound. They were loaded up and we rode out of the little city in the general direction of India, which at that time seemed a very long way off. We were to join up with the Mongol caravan belonging to the Prince of Dzun, the head of one of the four Mongol tribes in the Tsaidam area. The prince was returning to his home in the Tsaidam, and most of his camels had been hired to Chinese Moslem merchants who were on their way to trade with the Mongols. On the second day out of Tangar we reached a lamasery called Tungkussu. The lamas, flitting like bats in their dark red robes, received us kindly. We had with us a Chinese called Li, who had been provided by the merchant Ma Shin-teh and who had travelled this road for years. He was not exactly a servant: we lived together and ate together on equal terms, but he did very well by us. He spoke excellent Mongol and it was through him that I bargained with the head lama and exchanged my red pony—red, for Tibetans, is a lucky colour in a horse—for a still smaller black one, a spirited animal with an anti-foreign disposition, who never failed to try to buck me off whenever I mounted him.

A year ago this morning [30 March 1935] we left the lamasery and marched south-west through the hills. At the end of the day we came down to a country of dunes where we found encamped some Mongols who were bound for the same caravan as we were. Here, for the first time, we pitched our small tent, a remarkable device designed by Mlle. Maillart. We always had to pitch the tent ourselves—usually in half a gale—so that anything larger would have been unmanageable. It served its purpose very well: it was not rain-proof, but as it never rained that did not matter. Next day we joined up with the main body of the caravan and introduced ourselves to the Prince of Dzun, an effective, cat-like young man in a scarlet robe, who ran his caravan very well. He received us kindly but did not know quite what to make of us. We gave him a secondhand telescope, and although he did not know what to make of that either, we felt we had been accepted at court.

On April 1, a most suitable date, the whole caravan moved off and our journey began in earnest. The Tsaidam is a curious place. On paper it is politically part of China, and geographically it is part of North Tibet. It is, in point of fact, inhabited neither by Chinese nor Tibetans but by Mongols, who wear Tibetan dress, because they are less warlike people than the Tibetans, and are really playing the wolf in sheep's clothing game the other way round.

MANCHUKUO
MONGOLIA
SINKIANG
TIBET
CHINGHAI
SZECHWAN
HONAN
HOPEH
Trade Routes
Mr. Fleming's route
Scale of Miles
Peiping
Tientsin
Paotowchen
Urga
Iliassutai
Kobdo
Zaisan Nor
Lake Balkhash
Sergiopol
Chuguchak
Manas
Urumchi
Kuldja
Barkol
Aratam
Hami
Shanshan
Turfan
Bogdo Ola
Qara Shahr
Kucha
Aqsu
Kashgar
Yangi Hissar
Andijan
Osh
Yarkand
Karghalik
Khotan
Cherchen
Charklik
Tunhwang
Suchow
Kanchow
Liangchow
Ningsia
Chenfan
Lanchow
Sining
Labrang
Kuku Nor
Tsaidam
Nomkhon
Dzungaria
Tien Shan
Karakoram Range
Leh
Srinagar
Gilgit
Hunza
Nagar
Chengchow
Hankow
Siam
Tungkwang
Pinglang
Hwang Ho
Yangtse Kiang
Great Wall
Lop Nor
Gashun Nor
Sogo

We marched along the southern shore of the Koko Nor for three days, camping wherever there was fresh water. The lake is 10,000 feet above sea-level and 1630 square miles in area. It was frozen over when we passed it. The routine of life with the caravan was simple. Li used to wake us up before dawn with what he appropriately called "eyewash water." For some reason we had forgotten to take a basin with us and such washing as we felt compelled to do had to be done in the frying-pan. The only unpleasantness about life at that time was a violent and relentless head wind which came down from the west, sometimes accompanied by snow. The wind was with us all the time and made talking, smoking, and even consecutive thought practically impossible. It got on one's nerves, and its violence made it difficult to control the cooking fires. Twice the camp was nearly burnt out and we had to beat out the flames with sheep-skins.

The caravan was a fine sight on the march; 250 camels and 50 or 60 horsemen—a file of men and animals over a mile long—wound slowly between the frozen lake and the low but jagged mountains enclosing it on the south. But the stages were very monotonous and everybody was glad when the prince wheeled off the track and dismounted, for then we knew we could put up the tents, make tea, and get out of the wind.

For the first few days our life was complicated by sight-seers and we began to realize what it must feel like to be a bearded woman. Both the Mongols and the Chinese were vastly intrigued by us and our possessions; the one thing they could not understand at all was my pipe. They all smoke Chinese pipes with small metal bowls; owing to the treeless nature of the country the people have little experience of wood, and they could not understand why the bowl of my pipe did not catch fire when I lit the tobacco. The most important item in our food supply was *tsamba*, which we ate for breakfast and lunch for three months and which did not need cooking. It is roast barley meal which is eaten by soaking it in tea with rancid butter. After lunch I used to go out with a ·22 rook rifle. I was very lucky all the time, for I usually got a goose, or a hare, or a pheasant, or mandarin duck. The last is not generally considered fit for human consumption, but it is actually very good. On the third day out I got an antelope by a fluke shot at a range of 403 paces. I mention this because it sent up our stock in the caravan. Most of the men had never seen white men before, and they used to call me by a Chinese term of respect, meaning "Pastor." Mlle. Maillart they referred to as "that French person"; they had never heard of Switzerland.

On April 4 we left the lake and struck south-west into the mountains. The country became very barren and for four or five days we saw no sort of habitation, not even the crouching black Tibetan tents which we found occasionally along the lake shore. There was not always water where we camped and sometimes we had to load lumps of ice into sacks or melt snow from the snow-drifts. It was fairly cold. On April 5 we climbed a steep little pass, about 12,000 feet high, and the animals had to be taken slowly on account of the altitude. From the pass we dropped down on to bare tablelands, and here for the first time we saw wild asses. They are very pretty creatures to watch as they wheel and gallop in herds of ten or fifteen, manoeuvring with the precision of cavalry. They are very attractive animals, and we were not

altogether pleased when an old Chinese broke the leg of one with a long shot and it was some time before the animal was killed. On the march everybody went armed on account of the Tanguts, a Tibetan tribe with a bad reputation which I have no doubt they do not deserve. We crossed another pass where we saw our first and last trees on this part of the journey; and after that we dropped down to a place where there were some tents and Chinese-style mud houses. On April 10 we crossed a little pass at the end of a valley which was, for superstitious reasons, festooned with bones of sheep and hares. Here we met a string of small Tibetan yak and camel caravans, coming from the south by a road which led ultimately to Lhasa. From now on we had done with the mountains. We were marching through a country of dunes and rank grass, typical of the country round the edge of the Tsaidam marsh. The prince began to show signs of being in a hurry, because he was getting near home, and we did a march by moonlight, a ghostly and unreal affair. At last, on April 12, slithering over the greasy plain on the edge of the marsh, we sighted Dzunchia, the headquarters of the Prince of Dzun. It was typical of us that, although Dzunchia was a most important place in our plans, we had not the slightest idea what it was going to be like. It proved to be a dilapidated monastery round which had sprung up a warren of little mud huts used as a trading post by Chinese merchants in the summer months. We spent three days at Dzunchia while Li was hiring fresh camels from the Mongols. The prince's caravan went no farther west, and from Dzunchia on we had to travel on our own. Life was dull while we were waiting to start again. Our chief occupation was avoiding the head lama, a very boring old man, and writing farewell letters. After so many false starts we were pretty good at this. They eventually filtered through to Europe and were the last news anybody had of us until we reached Kashgar at the end of July.

The only other party going farther west was a party of Chinese Moslems who were prospecting for gold in the mountains round the Tsaidam. They were not very satisfactory travelling companions, and we did not want their company on the road because we knew it was difficult to get animals that season; but we could not refuse it. At Dzunchia they could not get enough camels and had to make do with half-bred yaks. At last our camels came and on April 16 we were marching west again in warm sunlight which brought the mosquitoes out of the marsh. Our next objective was Teijinar, but we soon learned that our new camels would only take us as far as Nomo Khantara, a kind of tribal boundary between the Mongols of Dzun and those of Teijinar.

Nomo Khantara, which was only two marches distant from Dzunchia, was an encampment in an endless grove of tamarisks. Here we found two Tibetan lamas who had been held up for a fortnight because the Mongols refused to hire them camels. They refused to hire us camels too, so we spent six days persuading them to change their minds. Those six days, as I afterwards discovered, were the Easter holiday. Nomo Khantara is not a very good place at which to spend Easter. The visitor will find it secluded and salubrious, but it is lacking in gaiety. There are no tracks and no landmarks, so that it is not safe to wander out of ear-shot of camp. On the first day we spent there one of the boys with the gold-seekers went off and never returned. We sent out search parties by day and lit bonfires by night and the lamas did a good

deal of intensive clairvoyance, but all to no purpose; the boy was never found. He must have died of hunger and thirst, possibly quite near camp. Apart from hare-shooting and patience, both of which are good at Nomo Khantara, the chief feature of interest was the "Lost City" about a mile to the north of our camp. I know it was not a city, and I am not at all sure that it is lost, though I find no reference to it by other travellers; but that was what we called it. It consisted of two ancient mud forts, the largest some 300 yards square, with crenellated walls about 30 feet high and 10 feet thick. Neither the Mongols nor the Chinese could tell us anything of their history. It is difficult to see why anybody should erect forts at a point of no strategic value on the edge of a marsh. A few miles farther west we found a large mausoleum of Turki pattern, which makes the whole problem even more complicated. All one can deduce is that the Mongols at Nomo Khantara, who alone in the Tsaidam cultivate barley, learned the arts of husbandry from whoever garrisoned those forts.

On April 23 we moved off again. The next stages were now monotonous in the extreme. Our chief interest lay in seeing whether we could keep ourselves in meat, which we always just managed to do. Although we were 9000 feet up, it was hot by day and we were troubled by mosquitoes; but at night water still froze inside the tent. After six more stages we reached Gorumu, on the Naichi river, which, like all the rivers in the Tarim and Tsaidam basins, is a standing refutation of the poet's theory that even the weariest river winds somewhere home to sea. These rivers, of course, do nothing of the sort. At Gorumu we were delayed for three days by the necessity of changing camels, for which Li paid in cloth and bricks of tea; many of the remoter Mongol communities have no use for silver dollars. There was a certain amount of gold in the Naichi, and the Moslem gold-seekers decided they had come far enough. From now on we travelled alone, and it was a relief to be no longer treated as a cross between Harley Street and Whipsnade.

The future was extremely uncertain. We badly needed information with regard to the situation in Southern Sinkiang. Were the Tungans still in control of the oases? Were they still fighting, and, if so, what sort of temper were they likely to be in? We hoped to find at Teijinar two sources for this information. One was a Cossack, a friend of the Smigunovs named Borodishin, who was known to have been at Teijinar two years ago and might be there still. On the road we asked everybody we met whether there was a foreigner at Teijinar. Some said there was; some said there was not: most said they did not know. It was not until we reached Teijinar on May 7 and saw Borodishin that we realized that our luck was in. We found him a charming man, living in the most desolate exile you can imagine. He was delighted to see us, and we him. Unfortunately he could give us no news of Sinkiang. Our other source of information was equally disappointing. The Turki merchants who used to come from the southern oases to Teijinar had for two years not been there at all; since the civil war broke out in 1933 no news from the province had filtered through. We knew no more than we had known in Peking. Borodishin however said he would help us as far as he could. He advised us not to take the main route, which runs slightly north of west to Gass Kul and on to the oasis of Charklik, but to follow a little-used road through the mountains.

We were not likely to find a frontier post on it, and as we had no passports that was an important consideration.

Nobody would take the risk of hiring us camels for the journey since they were unlikely to return from it; we had to buy them. The local prince of the Teijinar Mongols was away, so we had to deal with his young son, a boy who combined pride with prejudice and did not take to us. He forbade his subjects to sell us camels. Luckily his prime minister, or the man we used to call his prime minister, went behind the young man's back and finally we got four good camels at a stiff price. At Teijinar we paid off the faithful Li. No Mongols would come with us. On May 15, exactly three months after leaving Peking, we moved off across the desert towards the mountains with Borodishin in the lead. We had four camels and two horses. It was a grilling hot day, but in the foothills we were hit by a bitter wind and a sandstorm. We had to dismount from our horses and walk, numb with cold, in the lee of the camels. We camped that night in the gorge of the Chulak Akkan river, or the Boron Gol, as the Mongols call it. Next day we started off again in a minor blizzard which luckily did not last long. The country was extremely barren, and for three days we saw no living creature except two extremely small lizards. We were doing long nine-hour stages, and my black Tangut pony was showing signs of collapse. Both our horses were apparently in good condition; but they had both eaten the first fresh grass of the year at Teijinar, and the Mongols in those parts say it always has a weakening effect on horses.

On the fourth day we came to a place where there were three Mongol *yurts*, and here we halted for a day to rest the animals. We persuaded one of the Mongols to come with us to help with the camels and the loading, because Borodishin had a weak heart and it was pretty heavy work. We were still nominally in China, but the only sign of Chinese influence was a large stone which the Mongol brought with him to ring our silver dollars on in order to be sure whether they were good or not. Luckily they were. On May 20 we started off again. The valley widened out and there were large herds of orongo antelope and some wild asses about. What they found to live on in that stony waste I do not know. We had no grazing for our horses, and very little for the camels. The river was frozen and from time to time the ice cracked with a noise which would have justified more romantically minded travellers in saying they had been sniped by bandits. On May 23 we left the Boron Gol where its course takes a southward bend and struck north-west across rolling desert country 14,000 or 15,000 feet above sea-level. My horse was more or less out of action; we had to drag him along. There was no trail and Borodishin and the Mongol lost their bearings. We finally stopped, after a march of nearly twelve hours, without having found water. Actually this was no great hardship at that altitude. In the morning we found the spring for which we had been looking, and after two more long stages we reached Issik Pakte, our immediate destination. There we found a Turki encampment, and when we saw the non-Mongoloid faces we felt that we were almost back in Europe; or, at any rate, in the Caucasus.

This was very comforting; but it was less comforting to find that at Issik Pakte, as at Teijinar, there was no news at all of conditions in the southern oases. For two years this little community of half a dozen Turki families had

The Boron Gol Gorges: Borodishin leading the ca

Prince of Dzun's caravan camped S. of the Koko Nor

The southern route along the Takla Makan, between Niya and Keriya

Leaving Cherchen: the Desert Poplar (P. varifolia)

lived entirely cut off from their fellows. They had subsisted on the meat of wild asses and antelope, washed down with red pepper boiled in water. For all we knew about the situation in Sinkiang we might as well have stayed in Peking.

Borodishin could go no farther, for White Russians have a very low survival value in Sinkiang. However he persuaded the Turkis to provide us with two guides to take us to the next inhabited spot, Bash Malghun, twelve stages further west through the mountains. During the two days we camped at Issik Pakte I shot two young antelope which provided us with meat; we compiled a Turki glossary; and I exchanged my horse for a very curious little mare which the Turkis produced out of the salt marsh, a creature amphibious rather than equine in appearance, suggesting nothing so much as a water-rat suffering from mange; but she was a very brave little animal. At dawn on May 29 we said good-bye to Borodishin with great regret and he rode off eastwards; an hour or two later we started west. For two days we marched along the northern shore of the Ayak Kum Kul. Water was only procurable by scrabbling in the shingle close to the lakeside. None of the water was good and some of it must have been very bad indeed. At any rate on June 1, when we left the lake and struck up towards a low pass in the mountains overlooking it, a kind of creeping paralysis began to overtake our caravan. Two of the camels showed signs of distress, and presently one collapsed. We removed his load and left him. For the rest of the day we travelled on very slowly and made a dreary camp that night in a waterless gully nearly 15,000 feet up. The barley was finished and there was no food for the horses. The next day we managed to drag the other sick camel for about three hours, but then he too knelt down and would not rise, so we had to leave him. I did not shoot either of those camels because I knew their sickness was due to bad water rather than to inanition, and I thought that they had a chance of recovery.

The most unsatisfactory feature of this outing was the behaviour of our Turki guides. They were throwing away camels as casually as if they had been cigarette ends. They also had inconveniently large appetites, and our supplies were low. After we lost the second camel the guides set off with the survivors at a very brisk pace and were soon out of sight. There was no trail of any sort, and Maillart's horse was getting very weak. It could only be kept going by pulling and pushing, and we had great difficulty in following the camel tracks across the hard surface of the plateau. By midday we were almost carrying Maillart's pony. We knew he was no more good to us, but we could not leave him where there was no grass and no water. Ultimately we somehow dragged him into camp, after dark, by a little river called the Toruksai. Here there was a certain amount of grass and we lay up for a day. Maillart discovered a sore on the back of one of our surviving camels and doctored it very effectively with little help from the Turkis or, for that matter, from me. On June 4 we marched on again. Before moving away we gave Maillart's pony a feast—or the best we could produce in the way of a feast—of *tsamba*, some filthy dried apples we had with us, and antelope meat. He ate these very readily and started off with us. We forded the river, but on the other side he stopped and hung his head, and we knew that he could not do another stage. It was much better to leave him where there was water and a certain amount

of grass; so we went on, after taking his saddle off. He was an ugly pony, but we had grown very fond of him.

We were now working our way round the northern slopes of the Achik Kul Tagh range. Here we saw a good many marmots, one of which I shot, an animal unique in the expedition as being the only one we shot and did not eat. We were doing long stages, the longest being on June 6, when we marched for fourteen hours without a break and camped, after dusk, without finding water. Maillart did more than half this stage on foot, because at the start we could not catch the little mare. At last on June 8 we reached Bash Malghun, a small Turki encampment in a patch of grass and scrub. We were received with a certain amount of incredulity, but the news, as far as we could understand it, was good. The Tungans were in control of the southern oases, but nobody seemed to think that the Tungans would not be glad to see us, so we got two guides and two donkeys to supplement the surviving camels and went on. On June 13 we crossed the last mountain range between us and the Takla Makan basin, and dropped down into the desert, which struck us at the time as being abominably hot. There was only very little water there and that was salt, so we only halted for a rest and at dusk marched on for seven hours into the night. The camels were tired and the dunes were cruel going. Both camels and donkeys were on the point of collapse, but we managed to keep them going. At last, on the evening of June 14, we saw a line of pimples on the horizon which we knew could only be the tree tops of the oasis of Cherchen. We camped for the night, well pleased.

The next day, June 15, exactly four months after leaving Peking, we marched into Cherchen. I do not suppose there is any greater contrast on earth—except between sea and land—than the contrast between desert and oasis, and it was a delightful experience to come into this oasis. Here were all the sounds we had almost forgotten: the wind making a pleasant noise in the leaves; water running musically; doves cooing and cuckoos calling. Then we heard a cock crow and remembered that we had not eaten eggs for about three months. The little mare was terribly disconcerted, because she had never seen a tree before and did not know what to make of it.

This was all very nice, but unfortunately we were almost immediately arrested by a Tungan officer and an orderly who rode up and interrogated us. They then took us to the bazaar, deposited us in a building which looked suspiciously like a prison, and went off with our passports to military headquarters. Our passports did not entitle us to enter Sinkiang, and Chinese officials are very particular about this sort of thing. I thought we were in for a long stay, but, for some unknown reason, they viséd our passports without even pointing out that they were out of order, and a few hours later we were comfortably installed in a large house over the gateway of which flew no less an emblem than the Union Jack. This was the house of the British *aksakal* ("white-beard"), the local representative of the consul-general in Kashgar.

We stayed at Cherchen for five days, and spent most of the time eating and doctoring; we could not persuade the people that we were not highly qualified physicians with an unlimited supply of medicine. On June 20 our luggage was loaded on four donkeys and we took the road again; as we had been unable

to sell our two camels and the little mare, we took them with us unloaded. June and July are not the best months in which to travel in the Takla Makan. Maillart at this stage developed acute lumbago, and I imagine the last thing one wants to do when one has lumbago is to ride for ten hours without a stop through desert. Nevertheless at the end of every stage she still had sufficient strength to doctor the camels who had sores on their backs in which flies had laid eggs and which were now full of worms. She completely cured the sores. For nine days we marched on through mixed country: sometimes dune country, sometimes terraces of white hard mud, sometimes just flat desert. Five Turkis joined up with us, including a woman. They were rather tiresome people. One young man insisted on singing all the time; he only knew two songs. In this empty country we felt very homesick for the mountains and cursed the mosquitoes. Curiously enough, the things we missed most were uncertainty and hunger. It was too hot to eat or want to cook, and we lived almost exclusively on tea and bread. Although a journey through country held by rebel Tungan armies sounds, on paper, very exciting, in practice it is nothing of the sort; therefore we missed the uncertainty. The only thing we had to look forward to was the water-holes, which were saltish and full of obscure forms of insect life. It was only when we reached India that we were made to realize what a serious breach we had made with expeditionary etiquette by drinking unboiled water and going without hats. They practically told us that we had got to go back and do the thing properly. We crawled on very slowly day after day. We had only been able to purchase one horse in Cherchen, and chivalry and Maillart's lumbago compelled me to ride a donkey. Thrice we were hit by sandstorms, which is an unpleasant experience. On June 28 we reached the oasis of Niya, cooled off there for one night, and went on for another three days through the desert to Keriya. Here the road or track began to be more definitely marked, the chief features of the landscape being what the Chinese call *potai*, a kind of enormous milestone put up at, roughly, 2½-mile intervals. Some say they were erected by Chingghis Khan, but I think they were put up by the Chinese. At Keriya there was a large Tungan garrison, the commander of which sent us four sheep and six bottles of Russian eau de Cologne. All the bazaars were flooded with cheap Russian goods, for Russia dominates the province, politically as well as commercially.

On July 6 we reached Khotan, the headquarters of the Tungan army, and here we paid a number of official calls, including one on the commander-in-chief of the Tungans, a young general called Ma Ho-san. We also inspected the "mint," and were interested to hear that no less than 30,000 banknotes a day are produced without a penny of capital behind them. At Khotan we also found an eighty-five-year-old Armenian, a British subject who took in the *Times*. From his papers we learnt that England had been celebrating the Jubilee. We stayed for three days in Khotan, and then did six more very hot stages which took us out of Tungan territory. After passing the last Tungan military post we travelled through an informal demilitarized zone into territory controlled by the Provincial Government, which is of course controlled by the Russians. The Turki troops on the march sing the same kind of Communist songs as you hear in the streets of Samarkand and

Tashkent, and every unit is run by a Soviet agent holding an "advisory" position on the staff.

On July 17 we reached Yarkand. During the Chinese civil war the New City withstood a siege at the end of which the Chinese garrison were granted safe conduct to Kashgar. They marched out of the city and, in accordance with the best traditions of the province, the whole two thousand of them were massacred in the desert. We were now pretty tired, for we had been travelling fast. We were only four or five marches from Kashgar and very excited at the prospect of reaching it. We entered Kashgar looking like something which had escaped from Devil's Island. But Colonel and Mrs. Thomson-Glover and Mr. Barlow, the vice-consul, gave us the kindest of welcomes. Although the nearest railhead in India was six weeks away, we felt that we had got to the heart of civilization. We spent a fortnight at the consulate as the guests of Colonel and Mrs. Thomson-Glover. We paid many official calls, and on our last night in Kashgar the officials gave a banquet in our honour. There were a great many speeches in several languages but no assassinations.

At last, on August 8, we turned our backs on Kashgar and took the road for India. At Yangi Hissar, two days out of Kashgar, we left the desert and struck up into the mountains. The authorities had provided us with a body-guard of two Manchurian soldiers. We were glad to be back in the mountains. It was lovely country where the water was clear and it was cool at night and everything was no longer hidden in dust-haze. The senior member of the bodyguard, Lui, was an agreeable man whose great ambition in life was to shoot a marmot. I shudder to think how much of the Provincial Govern-ment's ammunition he expended on this task, but I doubt whether he has yet succeeded. He was a bad shot. There was no road worthy of the name. We merely followed, as before, the only practicable route for animals, and agile animals at that. One day we had to ford a river six times, which was anxious work for us because, like all travellers, we had been accumulating such things as films and papers as we went along and we were terrified of getting them wet.

The three Turkis with our caravan seized the opportunity to bring with them three pony loads of their own merchandize to sell in Gilgit, and we had to add to our caravan some yaks hired locally. It was lovely weather and magnificent country; except for the sores on the backs of the pack-ponies we had no worries of any sort. On August 17 we reached Tashkurghan, where a big fort dominates the valley of Sarikol. Four days later we reached the Chinese frontier post of Mintaka Karaul, where the Russian, Afghan, and Indian frontiers are all within a day's march. The official in charge of the post was a crafty Tadjik who spoke excellent Russian. He expressed his abhorrence of the Bolshevik régime; but he smoked a brand of tobacco only issued to the Soviet fighting forces and police. In point of fact he took his orders from the commander of the nearest Soviet frontier post. He tried to confiscate my rook rifle, but we managed to escape with the formidable weapon still in our possession.

We rode on to climb slowly up the Mintaka Pass, the Pass of a Thousand Ibex, 15,600 feet high, which separates India from China. The animals were in a bad way, but we eventually got up to the top of the col and found ourselves

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looking into India. We picked our way with difficulty down the other side of the pass and spent the night at the foot of the Gulkoja glacier in a stone hut, maintained by the Mir of Hunza for the benefit of mail-runners.

From now on everything was plain sailing. The Gilgit road may not be a very good road, but it is a road, and every night there was a dak bungalow of some kind to sleep in. We were in the country of the Hunzas, a very fine race of mountaineers who reminded me of stalkers in the highlands of Scotland. The people live in the valley of the Hunza river in small oases which they make on the sparsely covered shelves of rock by means of an ingenious irrigation system. On August 24 we reached Misgar, the terminus of the telegraph line from India, and here we got the Kashmiri clerk in charge to get in touch with Gilgit and ask that telegrams we knew were awaiting us there might be repeated. A less pleasant occurrence was when one of our careless Turkis dropped the pony carrying our suitcases into a violent torrent which runs through the centre of Misgar. South of Misgar the road improved and at difficult passages a small balustrade had been thoughtfully erected to prevent one falling off the track. I was riding a stallion which the consul-general in Kashgar wanted me to present, on his behalf, to the Mir of Nagar. He was an anti-social animal and whenever we got jammed together on a difficult place he began kicking.

On August 26 we skidded across the Batura glacier and two days later rode into Baltit, the capital of Hunza, perhaps the most beautiful capital city in the world. Here we had a slice of luck. Colonel L. E. Lang, the Resident in Kashmir, and Major George Kirkbride, the political agent in Gilgit, were both visiting Hunza and, in spite of the fact that we were disreputably dressed and villainous in appearance, they took us under their wing, and we saw the festivities arranged in their honour by the Mir of Hunza, a shrewd and remarkable gentleman of seventy. We rode ceremonially on yaks up to the Mir's palace, from which there is a fine view over the valley, blocked at the far end by the towering ice-walls of the 25,500-foot peak of Rakaposhi. From Baltit we crossed to Nagar by a rope bridge over the river. Nagar is to Hunza what Harrow is to Eton, though nowadays they get on well enough. At Nagar we were also kindly received, and there were more festivities in honour of the Resident and the political agent, including a sword dance characteristic of that part of the Himalayas. On September 1 we left Nagar and three days later rode into Gilgit. From Gilgit to Srinagar the journey normally takes twelve days, but as we were travelling very light we did it in eight. I believe the record is held by Lord Curzon who, with special relays of ponies, did it in six days. On the evening of September 12 we got off our ponies for the last time, gave away our kettle and cooking-pot, not without a sentimental pang, and drove into Srinagar by car. In the hotel people in evening dress looked at us with horror and disgust, and we knew that we were back in civilization.

So ended a journey which covered about 3500 miles and lasted for seven months all but three days. It cost us about £150 each. I have done my best to make it sound a difficult journey, but in point of fact we were never in danger for a moment: we were never ill, and we were never seriously short of food. It was merely a question of being moderately lucky all the way. The

oasis of Niya

journey achieved absolutely no results of scientific or any other value, and the only possible justification for it was that it was great fun to do.

DISCUSSION

Before the paper the PRESIDENT (Major-General Sir PERCY COX) said: To-night Mr. Peter Fleming is going to tell us of his journey across Asia. Most of those present probably have a general knowledge of his journey, from the series of articles which he wrote for the *Times*. Earlier he had written a very taking book entitled 'A Brazilian Adventure,' the result of an expedition which he joined in South America, one feature of which was an endeavour to obtain the latest reliable news of Colonel Fawcett who, as you know, disappeared ten years ago and has not been heard of since. Mr. Fleming next went out to Central Asia for the *Times* and is to tell us to-night of his journey straight across from Peking to India. We are extremely fortunate to have him with us to-night.

I should like to mention here that Mr. Fleming was accommodating enough to arrange with us a date for his lecture here which would coincide with Mlle. Maillart's presence in London, and it is with very great pleasure that we welcome her to-night. She has been good enough to agree to come on to the platform for a few minutes after the lecture to give us some sidelights on the journey.

We are also fortunate in having with us Sir Eric Teichman, who has just come across by more or less the same route and has made an extraordinarily fine crossing from China into India, crossing some very high passes under winter conditions during the course of the journey; a really wonderful accomplishment. We hope that he too will have a word or two to say after the lecture.

With this short introduction I will ask Mr. Peter Fleming to deliver his lecture.

Mr. Fleming then delivered the lecture printed above, and a discussion followed.

The PRESIDENT: As I told you, Mlle. Maillart agreed to come and tell us something of the part she took. I only need say a few words by way of introduction. As you have already heard, Mlle. Maillart is an athlete of international repute, on the one hand, and has been a great traveller, in the last ten years, on the other. She tells me that she counts on being enabled to finance her travels by her writings after her expeditions. I very much hope that we shall see a book from her on the subject of this very fine journey of which I now ask Mlle. Maillart to tell us a few of her own experiences.

Mlle. ELLA MAILLART: I feel greatly honoured by being invited on to this platform to-night, but really my friend Peter Fleming has left nothing for me to tell you. I can only say he has paid me a great many nice compliments and has tried, maybe, to make me forget that most of the time I was grumbling very much against him because, being the male of the expedition, he was forcibly the leader and I kept on saying, "It is very annoying for me to feel that I am being dragged about like a parcel of some sort." His reply always was, "Anyhow, you are very useful." Most annoyingly, he kept on saying the same thing.

As we travelled very slowly across Asia during those many weeks and months, we sometimes spoke about matters in Europe; we said that if we would succeed, we might one evening be standing here in order to tell you about our journey; but from so far away that seemed a most improbable happening, not only because there were so many miles between London and Central Asia, but because we had been travelling so many centuries backwards. Standing here now, I cannot help wondering whether I am dreaming, and feel I shall suddenly wake up in the middle of Central Asia.

The journey had a particular interest for me because three years ago I had been in Russian Turkistan, as far as the Chinese border, in the Tien Shan or the Celestial Mountains. I travelled on horseback and spent two months studying how the Khirgiz live. I had hoped to be able to continue my journey through into Chinese Turkistan so as to draw a parallel between the ways and customs of the natives on the other side of the border. That was, unfortunately, not possible owing to the civil war. I had to turn back. When on my journey with Peter Fleming I again found myself among camels and nomads living under tents I naturally felt at home; but of course it was not as exciting for me as for Peter Fleming, who was seeing it all for the first time. After a few years I suppose conditions will be the same on both sides of the border as a result of the propaganda slowly being carried on by means of the cinema and newspapers and, of course, the radio.

I thought that the Mongols in the Tsaidam would be happier than us Europeans and have less worries, being so far from the rest of the world; but that is not the case. They are very sad indeed because, as a result of the Chinese traders coming every year and selling them so many things they cannot pay for, they are always in debt to those traders who, the next year, return, go to the homes of the people, and take the best sheep as payment.

Much has been said about the cooking and our food, and I fear I cannot say much about anything else I did, except doctoring the Mongols; I certainly tried to use the well-known rook rifle once, but just missed an antelope. The cooking was easy: our man Li used to fetch the water and keep the pots clean. I just had to say "Now it is 6 o'clock. Put the duck in the pot." And then at 7 o'clock I used to say: "Now take the duck out of the pot." Perhaps the only brain wave I had concerning the cooking was before leaving Tangar, where I bought plenty of onions; I thought they would give flavour to the food, but the effort was wasted because Fleming used to sprinkle an enormous amount of red pepper on everything he ate. As for what he described as "filthy dried apples," they were very good indeed, but he was much against a vegetable and fruit diet, so I had them for myself and my horse.

Tsamba was very useful because we could eat it for breakfast and lunch and thus only had to cook once a day, which was quite tiring enough for me, as you can realize now! As the result of much effort I succeeded in forcing Peter Fleming to drink our Ceylon tea, so as to save half a brick of our last Mongol tea, which I am able to show you now. He explained how the Mongols are paid sometimes with a brick of tea or with cloth, rather than by dollars. At Sining and Tangar when we left the last Chinese village, a brick of tea was worth four dollars (Mex.) which is about four sheep in the Tsaidam; but a month farther on the price had doubled, and when we reached Cherchen such a brick was worth fourteen dollars (Mex.).

The natives use very little of that tea. They boil it in a copper pot with salt. Only the princes use a little piece of sugar and the rich Mongols use butter. Their butter is made once or twice a year only, so that after a few months it is very rancid, with green streaks in it and looks and tastes more like Roquefort or Gorgonzola.

Tsamba is eaten by soaking it in tea put with the butter into the sort of bowl which every Mongol carries inside his sheep-skin coat. If the Mongol is rich, the bowl is lined with silver, but we could not buy such a bowl, probably because the Mongols we met were poor or because those who had the bowls did not want to part with them. The barley used for *tsamba* is roasted first and then ground. This piece of leather in my hand contained a week's ration of flour. It used to belong to our friends the Smigunovs and had been used for carrying

koumiss, which is the fermented mares' milk the Khirgiz make. The leather still smells of *koumiss*.

If you are visiting a rich Mongol he puts a very large slice of butter in your cup and then gives you some flour. Also if the Mongol is rich he gives the flour to you out of a large wooden spoon, but as wood is so scarce in that part of the world the Mongols usually use their hands both to serve and when they mix the flour with the butter. As a matter of fact we started from Tangar with four spoons we bought, but as they broke very quickly we were left with nothing but two teaspoons. They were of no use for taking up soup or taking *tsamba* out of the bag. When we tried to buy another spoon from the natives they wanted to charge as much as one sheep, which was then one dollar (Mex.), which we thought too high a price.

Boiling tea, with salt added, is poured on to the butter to melt it, and you keep working the flour and the butter together while you carry on a conversation with your host about the affairs of the country. Mr. Peter Fleming, whenever we ate *tsamba*, used to mix it with Worcester sauce and red pepper. I preferred mine mixed with sugar and raisins. The flour, when you visit the tent of a rich Mongol, is sometimes mixed with a curious sort of biscuit made out of dried milk. In the summer season when the Mongols have quite a lot of milk they boil it for a long time and then dry it in the sun, and make themselves a supply of the biscuit to carry them the year round. It is not a very nice biscuit, but we found it only with rich Mongols.

When the flour and the butter are worked together you have a smooth cake which looks like a piece of bread. You kneel round the fire, eat the *tsamba* and drink the tea to wash it down.

The PRESIDENT: And now we should like to hear a word or two from Sir Eric Teichman, Chinese Counsellor at the British Embassy in Peking.

Sir ERIC TEICHMAN: I have been greatly interested to see the pictures which Mr. Fleming has shown us this evening as I have just come over, during the latter part of my journey, much the same route. But it is too late to commence discussing the details of the journey, because, once started, there would be so much to say.

I had the pleasure of meeting Mlle. Maillart and Mr. Fleming in Peking rather more than a year ago, when they were starting on their expedition. They told me they were going off to the Koko Nor, and I for one had not the least idea that they meant to try to get through to India. I am quite sure, as a matter of fact, that, if they had let us know and had tried to obtain passports for the journey in the usual way, that journey would never have been begun. The only way they could have made the journey was the way in which they did make it. Having left Peking to go to Kansu, they disappeared into the blue. I do not suppose there are many parts of the world from which one can disappear into the blue quite so completely as in that part of Central Asia. For many months we heard no more about them. And then, if I remember rightly, the *Times* got rather anxious as to what had happened to Mr. Fleming; a very valuable member of their staff had apparently disappeared. They started making inquiries, but no sooner had those inquiries been set on foot than a telegram arrived from Colonel Thomson-Glover, the Consul-General in Kashgar, to say that these two intrepid travellers had arrived there. That was the first we heard of them for many months.

The map showed you the route they followed. To those unacquainted with that part of Asia it may not have meant so much as it did to me. To me it meant a great deal. The other two routes to Chinese Turkistan are very well known, but, so far as my fairly comprehensive knowledge of the literature of Central

Asian exploration goes, I do not think anybody has ever entered the Sinkiang by the route across the Tsaidam. Mr. Peter Fleming and Mlle. Maillart have opened up a big stretch of practically new country.

I am afraid it is no use whatever Mr. Fleming and Mlle. Maillart telling us that there was nothing in the journey. Those of us—and there are quite a few in this room to-night—who know those parts of the world realize that theirs was a very remarkable journey, and I think there are only one or two parallels in the history of Central Asian travel for such a journey having been undertaken by a lady.

The PRESIDENT: Mr. Fleming and Mlle. Maillart have given us a delightful evening. As you have heard from Sir Eric Teichman, the expedition that they accomplished is of no little value geographically; they have opened up quite a piece of country that was practically unknown. The charming way in which Mr. Fleming delivered his lecture and the attractive touches with which Mlle. Maillart has delighted us since, can but call forth our very warm praise. I ask you to join me in enthusiastic thanks to them for a very interesting evening.

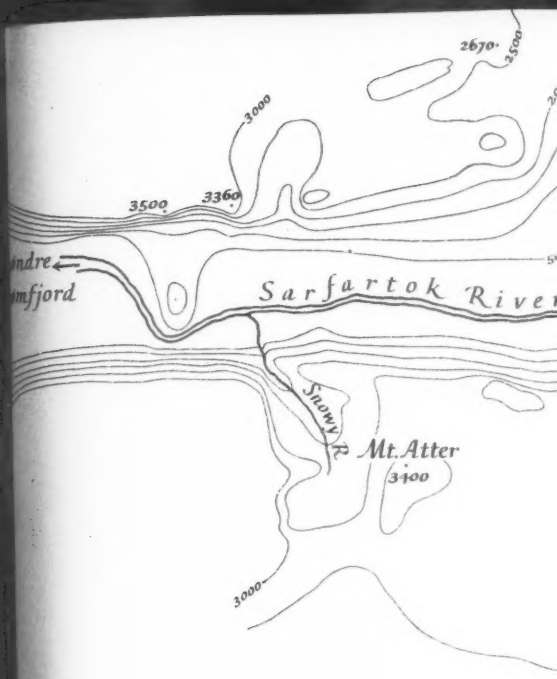
The vote of thanks was enthusiastically accorded, and the proceedings terminated.

THE OXFORD UNIVERSITY GREENLAND EXPEDITION, 1935: *A Paper read at the Afternoon Meeting of the Society on 6 April 1936, by*

H. O'B. HAYWARD

WHILE the greater part of the Greenland continent is covered by the Ice-Cap, it happens that at a point on the west coast, at the latitude of the Arctic Circle, the Ice-Cap has finally retreated, leaving uncovered an area between Holsteinsborg and Sukkertoppen stretching back about 100 miles from the sea. The most distinctive feature of this area is the Great Søndre Strømfjord, which runs in from the coast for nearly 100 miles, in a north-easterly direction. Professor W. H. Hobbs and the Michigan University Expedition established a base here for meteorological work in the years 1926–29, and mapped part of the country round the head of the fjord. Otherwise, though travellers have crossed the Ice-Cap at nearly this latitude, most of the district was known only by reports from the Greenland caribou-hunters, and, except for the fjord itself, was completely unmapped. Accordingly, in July 1935, the Oxford University Exploration Club sent out a party of four—H. O'B. Hayward, P. G. Mott, M. F. Atter, and M. J. Dunbar—to make a Reconnaissance Survey of the country south and east of the fjord, and to collect any other information possible. Grateful acknowledgments are due to Mr. Max Nicholson, the Home Agent, and to the Expedition Council of the Oxford University Exploration Club for their advice and assistance throughout. The party also received every kindness from Herr Direktor Daugaard-Jensen and the staff of the Grønlands Styrelse. By arrangement with Herr Rudolf Sand the party sailed from Copenhagen on July 6 in the motor schooner *Dannebrog* with Captain Petersen. The *Dannebrog* was the annual relief ship for the Thule colony, and Captain Petersen had been for many years in the service of Knud Rasmussen, and was now making his twenty-fifth consecutive annual trip to Thule. At Etah the *Dannebrog* was to pick up the personnel of the Oxford University Ellesmere Land Expedition, which was returning after a winter in the Canadian Arctic.

After twenty-eight days' sailing, the *Dannebrog* reached Holsteinsborg on August 3 and the personnel and stores were disembarked. Through the kindness and good services of the Kolonie Bestyrer, Herr Rasmussen, a motor boat was obtained immediately, and after being most hospitably entertained by the Herr Bestyrer and his family, the party sailed again at noon of the following day, August 4, and passed down the coast towards the mouth of Søndre Strømfjord. Our route lay south, across the mouth of the great Magliakfjord and then through a maze of coastal skerries. All down this coast the shore-line is most impressive—a range of snow-capped hills weathered into fantastic shapes rising almost sheer out of the sea with a network of fjords and shallow channels running out to their base. Behind were glimpses of high snow mountains, which with the clouds above them made a very fine spectacle. By midnight we were approaching the narrow, hidden fissure in the coastal range which led into Søndre Strømfjord, and an hour later were in the fjord itself, passing up a narrow canyon, with rock walls



HE SARFARTOK RIVER DISTRICT

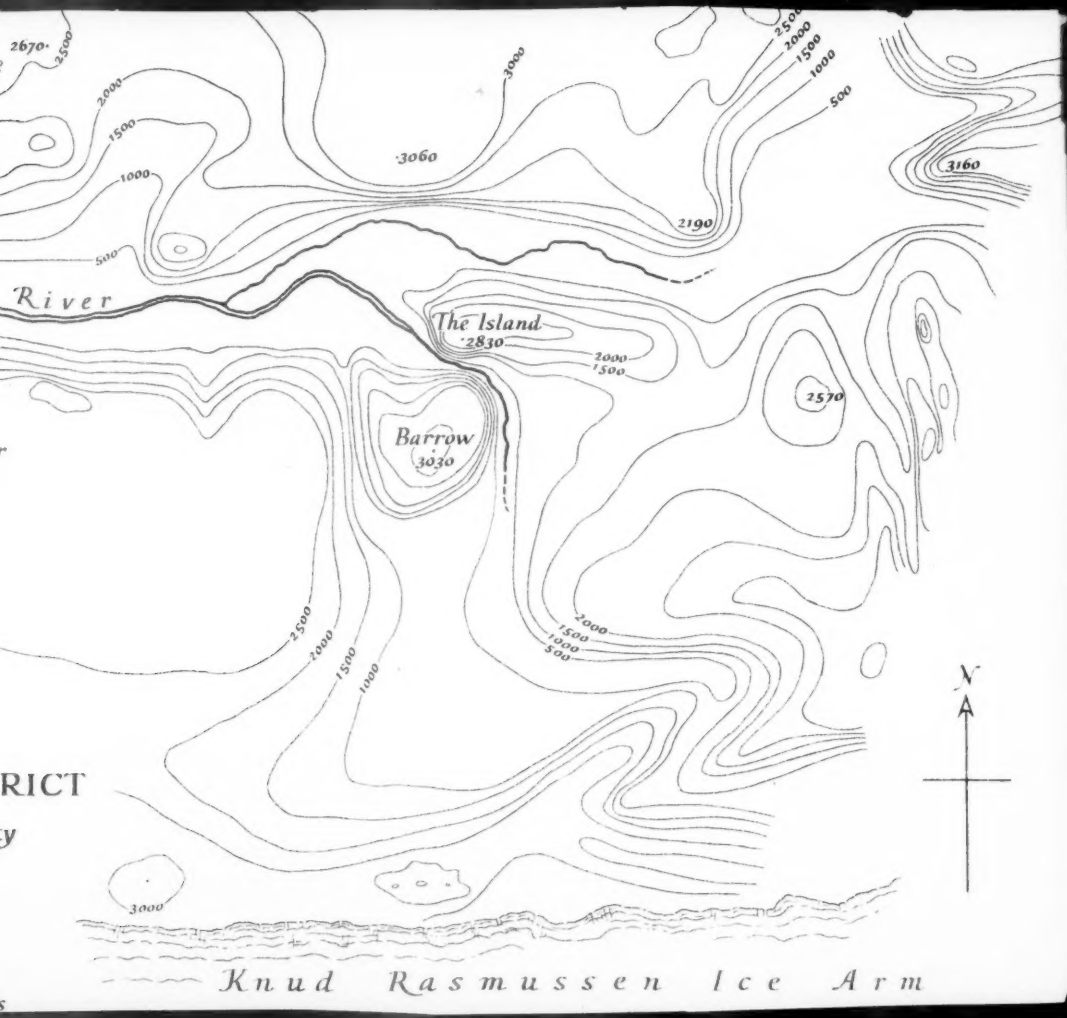
From a Survey by the Oxford University Greenland Expedition 1935

Scale 1/125000

Miles

1 0 1 2 3 4

Heights in feet *Contours at 500 ft. intervals*


2670
2500
2000
1500
1000
500
3000
3060
2190
3160
River
The Island
2830
2570
Barrow
3030
N
RICT
3000
Knud Rasmussen Ice Arm

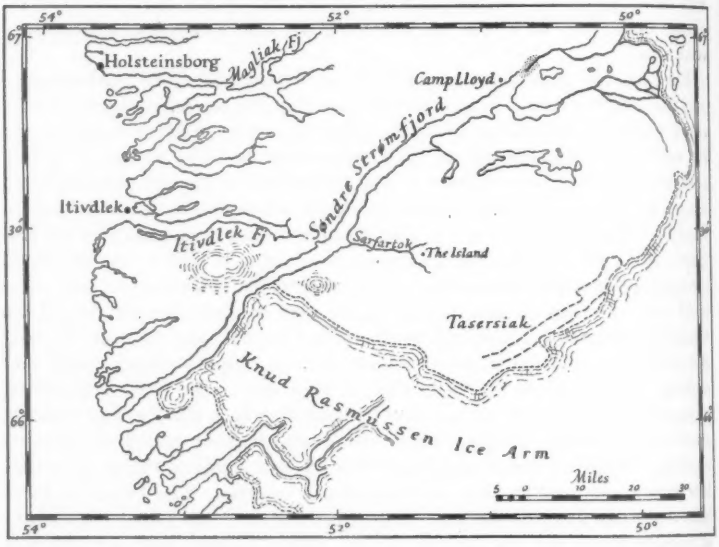
rising steeply above us on either side. The country surrounding Strømfjord is, of course, bounded to the east by the Ice-Cap, and on the west by the sea. To the south and south-east of this area lies one of the most distinctive features of the West Greenland coast of these latitudes, the great tongue of ice which stretches out from the Ice-Cap and running down to the sea, completely separates the Holsteinsborg and Sukkertoppen districts. The ice-arm, named after the great Danish traveller Knud Rasmussen, reaches to the coast to the south of Strømfjord and actually borders the southern shore of the fjord itself for some distance inland. The ice-arm boundary bends round in a broad sweep and runs back to the Ice-Cap proper, thereby encircling the Strømfjord hinterland, the unknown area which we were to survey, and cutting this off entirely from all communication with the south. Thus it will be seen that for the first part of the journey up the fjord the route lay along, under the very edge of, the ice plain which covers the Greenland continent.

Between the coast-line, extending from Holsteinsborg to Sukkertoppen and the country inland from which the Ice-Cap has retreated, there is a very sharp contrast. The Great Fjord is a long, narrow waterway, screened at the sea end by an island known to the Greenlanders as "The Stopper," and by coastal skerries. The coast here is very reminiscent of the sharply-weathered ranges at Cape Desolation, but the character of the country on either side of the fjord changes steadily as one goes up from the sea to its head near the Ice-Cap. At the mouth steep rock-walls rise to a height on either side, weathered into pinnacles and crags, and bare of all vegetation. On the south side, on a level with the tops of these peaks, can be seen behind them the line of the Knud Rasmussen ice-arm and on the lower saddles, joining peak to peak, the ice has overflowed to form hanging glaciers, sloping steeply down, and ending in moraines at the water's edge. This side of the fjord is, in effect, a jagged wall of rock about 2000 feet high holding back the Ice-Cap which at points has pressed through between its peaks. Farther inland the country changes. While no lower, the mountains on either side of the fjord are far less weathered, and in their contours more rounded. The height of these hills decreases towards the head of the fjord, till at Camp Lloyd the country is comparatively flat; an expanse of low, rolling country with a number of small lakes and streams.

A base was made on the southern shore of the fjord, about half-way towards its head, where a swift glacial river runs in. This point is known as Sarfartok—"place of many currents." On either side of Sarfartok estuary a high plateau, 3000 feet, drops steeply to the fjord. Farther inland this plateau becomes broken into ranges running roughly parallel with the fjord itself, and through these ranges winds the river which we christened Sarfartok. For the last 10 miles of its course it runs down at right angles to the fjord in a glacial corridor which the ice has cut through the high plateau; this is a deep groove about 1000 yards wide with the plateau walls rising steeply on either side. In the lower half of the fjord practically the only break through the high mountain wall that bounds it on either side is at Sarfartok, where the big river which we traced flows in to the fjord; at this point, too, on the northern shore, there is an inlet, and a low corridor provides the hunters with a 10-mile portage to the

head of Itivdlek fjord, which comes out at Itivdlek, a small fishing community south of Holsteinsborg. Commanding this natural highway stands Kakadokak, a magnificent snow peak, one face of which was the landmark from all parts of the Strømfjord district, while the other side is visible from the coastal skerries round Holsteinsborg. On both sides of the fjord the high mountain walls continue unbroken above and below these two opposing gaps.

The Sarfartok estuary itself is about 1 mile wide, and the river runs in right over on the north-east side; the rest is a labyrinth of sand banks and tidal channels. Above the tidal limit is a level plain, about 20 feet above the river bed, partly boulder and stone, partly marsh and bog; it is possible that in the spring spate this is entirely covered, and the river extends right across the valley. The first march inland was interesting, for about 5 miles in there has



been a heavy subsidence from the steep side of the coastal plateau, throwing out across the valley a small hill about 900 feet high which acts as a drop-curtain, screening all the unknown land beyond, while left visible above it is the top of a high mountain far away in the interior. The party's first discovery was startling, for having set out to climb this curtain hill, when within half a mile of it it was found that the stony plain dropped suddenly and there appeared literally at its feet a fast river, far bigger than anything it had anticipated. On the first reconnaissance the party was puzzled by what afterwards was realized to be the most characteristic feature of the country. It had been expected that there would be a country of hills rising from a plain at about sea-level, but what was found is better described as an upland plain with the fjord and its tributary river lying in steep-walled, narrow channels 3000 feet below. In fact, the country south of the Great Fjord in this area consists first of a belt of high tableland extending to 10 miles inland and thereafter breaking

up into alternate valleys and mountain ranges approximately parallel with the fjord itself. The vegetation gradient between the valley floor and this tableland is very marked; below there is rich tundra vegetation—blueberry, heather, coarse grass, and shrubs; but above, on a level with the Ice-Cap to the south and east, there is this plateau of naked rock, a mass of small boulders, covered with grey moss and with patches of snow lying in the middle of August. A conspicuous feature which marks the inland limit of this tableland is a mountain which was named "The Island"; the river forks and has cut a deep valley on either side, leaving it the only distinct mountain, as opposed to high tableland, in the district. The "Clearwater" side is climbable, and slopes away, but the Sarfartok side is precipitous. Just above the "Island," the Sarfartok runs through a narrow gorge which it reaches by swinging round the end of the first real mountain ridge, beyond which it disappears inland. Down a 5-mile corridor with steep cliffs on the opposite side of the "Island" runs a small stream, in size and appearance very like a Hampshire chalk-stream, over a bed of stones, with rushes and shrubs at the side. While the main Sarfartok is a thick, coffee colour, this stream is perfectly clear and of course much smaller, so that it was forded fairly easily near its junction with the Sarfartok. This valley was a particularly striking feature, having a perfectly level floor, half a mile wide, with an almost perpendicular cliff rising on the north-western side to the plateau above. The hill called the "Island" formed the opposite side, and at the head of the corridor inland it ran out into a low basin, the inland wall of which was the first range of hills that lie across the route to the inland ice.

This Clearwater corridor and the Sarfartok valley into which it runs have a very striking cross-section, and give the impression of having been gouged out of surrounding table land, possibly by an advancing tongue of the inland ice during the last of the successive glaciations to which this district has been subject. The Clearwater stream does not appear to start very far inland, so does not give a clue to the best route to the big lake: at first it was thought that the striking difference in colour between this and the main river might be due to this clear stream coming out as an overflow from the lake, while the other, being muddy and thick, might well drain directly from the Inland Ice. The country has now been explored as far as the first barrier range of hills, and the party which is to go out this summer to continue the work will at the start have to decide which route will take them most quickly and easily into the interior. The choice probably lies between following: the Sarfartok in its curl round the southern flank of the range near the Ice-arm or going up a valley opposite the Clearwater corridor and crossing by a high pass into what from the "Island" appeared as a valley leading through the successive ranges into the interior. There appear to be four or five of these hill ranges, all parallel to the fjord, and beyond can be seen the Inland Ice.

Points in connection with the survey methods used and difficulties encountered fall naturally under two headings: firstly, those concerned with survey work on a small scale in fairly difficult country, with a large area to cover in a short time and with limited resources of labour and personnel; and secondly, problems in the maintenance, equipment, and transportation of a small and essentially mobile party, completely isolated and self-dependent.

The main object of the expedition was to bring back a map, and our survey methods were influenced by several factors:

(1) The immediate object was the mapping of a large lake reported by the Greenlander caribou-hunters to lie up against the Ice-Cap. It was decided to locate this by some form of triangulation and a chain of triangles with approximately 5-mile legs was visualized, reaching from the fjord to the Inland Ice. In order to get reasonably well-conditioned triangles, it would be necessary to keep the strip of country covered fairly wide, so it early became evident that one of the main considerations would be the covering of a fairly large area.

(2) This at once raised the question of getting over the ground with food and survey equipment in reasonable time. Obviously, much depended on the nature of the country, which has been described above; the level valley floor, and the river, assisted transport, but it was necessary to leave the camps below and climb 3000 feet every time a survey observation was to be made, owing to the general high level of the country.

(3) But as the expedition on the journey out approached their destination on Strømfjord it became increasingly clear that the time factor was going to be the really decisive consideration. Originally the party had hoped to spend eight weeks in the field, but owing to the date of leaving Copenhagen being later, and that of returning from Holsteinsborg earlier than had been anticipated, and to the longer time taken by the schooner *Dannebrog* than by the Government steamers, it actually had under four weeks in which to produce its map.

To sum up, the factors influencing the survey were the large area to be covered, the nature of the ground, and the very short time at our disposal. In the circumstances it was necessary to sacrifice accuracy if any results were to be produced at all, but the surveyors tried to lose accuracy in ways which would matter least. They aimed at producing a map consistent in itself but not accurately tied down to the existing map. Apart from the time involved, the numbers, experience, and funds of the expedition did not admit of an accurate determination of longitude and latitude with the time and costly gear required; this was left for a future expedition who would ultimately follow them. In the same way the base-line was only measured by a subtense method, since, as long as the map held together itself, whether the so-called 1-inch scale was correct or really a fraction larger or smaller could easily be determined later. Moreover, while the heights of the triangulation stations relative to one end of the base-line were computed trigonometrically from the theodolite observations the initial height was only fixed by means of an aneroid reading: there was no time to compute a datum height from measurements of mean sea level. It will be seen however that although not accurately fixed in height, position, or scale, so long as the triangles closed satisfactorily the map would hang together and at a later date could be completely fixed, merely by three further measurements of a base-line, a datum level, and a determination of latitude and longitude. Fortunately the triangles closed reasonably well, and it has been found possible to organize a further expedition under Peter Mott, who was the second surveyor last year, to go out this summer and complete these measurements and extend the map further into the interior.

It has been suggested that a suitable point for a datum height and a determination of latitude and longitude would be the "curtain hill" referred to earlier, from which the height of the "Island" could readily be computed, and to which the whole triangulation could easily be tied down. Mott proposes also to cut in another base-line, probably some way inland, which he will measure accurately, and so establish an accurate scale. The choice of survey equipment was dictated by considerations to be considered later in connection with problems of maintenance and transport. It suffices here to say that economy of weight, consistent with accuracy, was the essential factor. Through the kind advice of Captain Carkeet-James, R.A., of the Public Schools Exploring Society, a 3-inch Cary Theodolite was hired from Messrs. Clarkson, of Holborn, with vernier reading to the nearest minute. Light Army plane-tables with plain sight rules, box compasses, and Indian Pattern Clinometers were kindly lent by Colonel Tandy, of the Oxford Survey School. Aneroids were also hired from Clarkson's. This equipment proved adequate, and stood up well to the hard wear it received.

On August 5 a reconnaissance party was landed at Sarfartok and went inland, while the remainder visited Professor Hobbs' camp at the head of the fjord. The object of this first inland trip was to discover whether the Sarfartok estuary would be a suitable place for a base camp: that is, whether there was behind it a route for transport into the interior. The description already given of the country will show that the Sarfartok valley ideally fulfilled the second condition; and will also illustrate the conclusion to which the reconnaissance party was forced, namely, that owing to the high plateau along the southern side of the fjord, any base-line, and all subsequent survey work would have to be carried out at a height of 3000 feet, on top of the plateau and into ranges by a party moving and camping in the valley below at nearly sea-level. This state of affairs had not been anticipated, and had obvious disadvantages, since one had a 3000-foot climb in order to get any view at all, but from the look of the country from Snow Peak away to the north-east it seemed unlikely that the general height of the country farther up the fjord would be much less, and the fact that the Sarfartok valley offered a natural highway into the interior could not be disregarded. Moreover at this point a base-camp would be nearer the supposed position of Tasersiak than if it were farther up the fjord. So it was decided to base on Sarfartok, and measure a base-line on the high land to the north-west.

It soon became evident that the procedure would have to be to make a series of definite survey climbs to the mountain tops: and when already pressed for time, the extra hours necessary for a 3000-foot climb before and after each survey observation made it essential to reduce the number of these to the minimum necessary for a chain of triangles, and to map the required area with as few expeditions to the hill-tops as possible. It was therefore important, while up on top with a good view, to make sure of getting all the observations necessary for the final maps, for there was not time enough to climb intermediate peaks and fill in details on the plane-table by resection from previously determined triangulation stations; it could only be hoped that enough detail fixings would be obtained by plane-table rays at the Triangulation Points, drawn in while theodolite observations were being

taken. While this procedure, by eliminating all resected points, cut down the time which had to be spent on survey, thus leaving time in which to penetrate a further distance inland, along the valleys with food and camps, it meant that the survey party had to take up to any station on the hill top a complete set of plane-table equipment as well as the theodolite and tripod. The climbing was not difficult (a long, steep scramble up scree or very roughly pitted igneous boulders), and ropes were never used; but the equipment was unwieldy and it was hard to make as quick time as could have been wished. In measuring the base-line the two observers started at 5.30 a.m. from their camp of the previous night in the valley below the high plateau which had been selected, and reached the top at 9 a.m. Base West and Base East had been reconnoitred by 3 p.m. and theodolite observations and the base-line measurement completed by 7 p.m., by which time it was very cold with a high wind. The valley camp was reached by 9.30 p.m., and the party got back to the base camp after midnight, after a twenty-hour day made unavoidable by the scarcity of time and the nature of the country.

This problem is shown up by the way in which a programme was worked out: having established a camp at a point in the valley and taken all necessary observations from suitable neighbouring hills, the next day was spent in moving inland 5 to 10 miles and establishing a further camp; the following day a survey party of two started early, climbed to a suitable point on the plateau above the newly established camp in the valley below, made the requisite observations, and returned late. The remaining two meanwhile were bringing up supplies, ready for a further move inland; the third day of this phase was spent by the whole party in carrying rations on, and dumping them on the way to the next camp, while on the fourth day it was perhaps possible to take observations from a hill on the other side of the valley at a pair of stations at two corners of a 5-mile triangle. Roughly, observations with the requisite depôt-laying and penetration took from four to five days.

Another difficulty, natural in broken country such as this, was the recognizing of one triangulation station when one had arrived at another, and wished to take a back observation. Normally of course all the stations would be carefully reconnoitred and cairned before any triangulation began, but there was no time for this, and often while observing from A to B it was just to be hoped that when B was reached it would be possible to identify the point A. So often alternative rays were taken to nearby points, in case the back observation from any one of them should be difficult, or in case one should be unsuitable as a point from which to push on the triangulation further. However this difficulty had been anticipated, and at each station, besides observing a round of angles with the theodolite, and taking rays for detail fixings on a full-scale plane-table, rays were also taken to prominent points, near and far, on a special $\frac{1}{4}$-inch plane-table, and when this was afterwards set up at B and correctly orientated the back ray B to A was a great help in identifying the first station. But while the second plane-table was essential, it was another thing with which to climb up the hills, and it meant that, with the normal survey party of two clothing and food had to be reduced to a minimum, and no tent could be carried; hence, one had either to climb up, get all observations done, and climb down, or spend the night pretty well exposed and lightly

clothed with an almost permanent wind off the Rasmussen ice-arm a few miles away. To have brought the whole party up, carrying tents and food and clothes, would have been throwing time away, as only two were necessary for the survey, and the remainder could be depôt-laying in the valley below; but it would not have been pleasant to have been caught on the top in a bad blizzard, such as was threatening when the first reconnaissance was made from Snow Peak.

From a survey point of view the expedition was extremely fortunate in the weather, for with the exception of two or three wet days at the beginning, and one day at the end it remained perfectly fine. The visibility was magnificent, and details on a mountain side 2 miles away stood out as though seen through glasses, so that at first distances were very deceptive: and this was the more remarkable in that the coast at the bottom of the fjord is subject to long and frequent periods of fog. Judging from Professor Hobbs' records taken at Camp Lloyd at the head of the fjord over a long period of months, the party was very lucky, and normally fog and rain is common. Survey work in this area is particularly at the mercy of bad visibility, for besides the impossibility of triangulation work in such conditions, as indicated above, it is not possible to stay for long on the hill tops, waiting for a break in the mist and clouds unless much time and energy has been spent in bringing up tents, food, and clothing. And should a party be caught on the top during the normal hurried observation trip, while travelling light, there is the choice of sitting tight with a minimum of food and insufficient clothing or trying to feel one's way blindly down the steep and unstable scree slopes.

The temperatures here are deceptive, for while in the valley in August the temperature is about that of a fine spring day in southern England, on the hill tops with the Ice-Cap in the distance it can rarely be much above zero and snow appears to lie in patches all the year round. A strong, cold wind seems to blow almost permanently over the high plateau, generally coming directly off the ice from the south and east. Occasionally down the valleys there blew a strong foehn wind, accompanied by a sharp rise in temperature, and most days a slight wind would be blowing down the valley floor: at the same time however the higher clouds seemed usually to be moving steadily toward the Ice-Cap.

Briefly, to sum up the survey problems:

The first was the constant necessity for a 3000-foot climb from camp to take any observations; this made the time problem particularly acute, and it became necessary to combine all detail fixing with the triangulation. The second problem arose from having to take a quantity of survey gear up to the hill-tops, thus having to economize in clothing and food, and so to be dependent on weather conditions and to have to hurry the observations so as not to spend a night on the tops. The third difficulty lay in the lack of any preliminary reconnaissance and the necessity of pushing ahead with triangulation towards points which one had not approached closely: the small scale, approximate plane-table chart was found to be of great service in these conditions.

The second series of problems were connected, not with survey, but with transportation and maintenance. In view of the survey procedure adopted, mobility was of the first importance; and since the party was completely out

of communication with the outside world it was necessary to be entirely self-dependent. This second condition made it essential to have an adequate base, to act as a survey office and store-room and emergency casualty station, but owing to the shortage of time this base had to be only just sufficiently elaborate to serve its purpose, and no more. The programme was to spend a minimum of time in establishing this base and measuring the base-line, and then to push on as quickly as possible, penetrating inland and depôt-laying simultaneously with survey trips up the mountains. To get the utmost mobility, rations and equipment for the inland penetration were cut down to a figure previously decided on; as the party was without external contact a fairly generous staple ration had been allowed for, and also a supply of luxuries for use at the base, and in case of partial loss of supplies or the failure of the boat to return and pick us up. In the same way, there was at the base a certain amount of heavy gear, taken as material calculated to make the expedition independent of any but a major loss or damage of equipment.

All this however was left at the base, and once a move inland had been made only essential survey equipment, light tents, and simple cooking gear, and 75 per cent. staple rations were carried. But even travelling as light as was safe or possible, it was found that the problem of covering the ground in the short time allowed, whether in climbing for survey observations or in penetrating inland with supplies, was the greatest difficulty. It was thought that the chance of water transport would be worth a great deal, and the decision to use the Sarfartok river undoubtedly led to difficulties; the resulting difficulties in the early stages were more than counterbalanced later. A Klepper canoe was used, the procedure being to load it with three ration boxes (containing eight man-day rations each) and rucksacks, and then take it up-stream along the bank, one man towing, and one man holding it off the side. The river, for most of its lower part (below the "Island") flows within a wide channel, with a strong current in the middle and slack water up the side, and a good towing bank. At places there are bends, and the whole stream washes up against the outer bank with very fast water; and at one point a portage with the dismantled canoe was necessary. Land transport was by back-packing, with Everest carriers, and the value of the canoe was soon evident, for the contents of the boat were found to make a good load for four men, apart from the dismantled boat itself; while by towing with two men, the other two were released for survey work. Moreover the labour of carrying a 13-lb. theodolite and other survey gear up 3000 feet for every observation made it advisable to reduce further back-packing as much as possible.

Where the river was not helpful was at its mouth, for it entered the fjord through a heavily silted estuary; stores were first unloaded from the motor boat at high tide, but had to be landed on the far side of the estuary from the main river channel, owing to the current and lie of the sand banks. By the time the last load was ashore the tide was out, and the gear had to be dumped a long way from any suitable storage point. Valuable time was lost in bringing in these later loads at subsequent high tides, and after this had been done and a food dump established, all gear and a supply of rations had to be taken across the estuary through a maze of shallow tidal channels, in order to establish a base in a suitable position and on the actual river bank. The first load was

Looking up Sarfartok valley from the fjord

Looking up Sarfartok valley from the base camp

Looking down the valley from Camp Memory

"The Island"

Sondre Strømfjord

landed from the motor boat on August 7. The food dump was completed by August 9, but it was not till August 12 that a base-line had been measured, and the base camp established, and the party ready to move inland. By August 14 sufficient stores and all gear was at Snowy River Camp—having been brought up first by water, and then overland; and on August 15 Dunbar and Atter started towing the loaded Klepper up-stream to the fork in the river below the "Island." Hayward and Mott were to climb Snow Peak for observations and then follow up the valley on foot to meet the others at the river fork. By the evening of August 16 the survey party were encamped at this point, and the next morning made contact with Dunbar, who told them that Atter had been drowned. Dunbar and Atter had camped on August 16 about three-quarters of a mile below the rendezvous, and shortly after starting the next morning, while towing up a piece of fast water the canoe touched on a submerged rock, turned broadside on, and capsized. In attempting to save the cargo Atter was swept away and drowned. His body was not recovered, and after two days of search the survey work was continued; but the original plan had to be modified, and owing to the delay and reduction in personnel, all hope of reaching Tasersiak, the big lake, was abandoned. Fortunately it was found that by climbing one further hill (the "Island") a sufficient number of sights were possible for the completion of a map of a reasonable area; and after that the party returned by stages to the base, where they were picked up by motor boat on August 30.

Michael Atter's death was of course a terrible grief to all, but after a thorough search there was nothing to be done except to carry on with the work as well as possible. Before sailing, the members of the expedition did not know one another particularly well; but by the time they reached Greenland, after twenty-eight days in the cramped quarters of a small schooner, they had all come to value Michael's infectious enthusiasm and unfailing cheerfulness in times of monotony and discomfort. He was the "strong man" of the party, and worked magnificently in a race against time, when faced in the early stages of the penetration with long hours, short rations, and lack of sleep. But besides these practical qualities which, had he lived, would have placed him in great demand for the mountaineering and exploration that he loved, there was in him something deeper, an unfailing certainty of purpose and a scorn of all pettiness. At the scene of his death a cairn was built with his ice-axe in the middle: it is an elemental place of winds and running water, sun and snow and ice, and he could scarcely have left us at a more lovely spot. With the permission of the Grønlands Styrelse it is hoped to name the peak which he was the first to climb Mount Atter.

With a second expedition in preparation under the leadership of Peter Mott it may perhaps be worth mentioning a few difficulties which will probably be met in any future exploration of this area: firstly, this time the party will arrive at the zenith of the mosquito period, which last year was avoided, and as the mosquitoes die off the black flies appear. These pests are more than unpleasant, they definitely impair the efficiency of an expedition of this type, where success depends largely on long, forced marches under heavy loads, and long climbs to the hill tops, together with accurate and deliberate observations necessarily carried out with instruments and observer enveloped in a

cloud of insects. An advantage not expected last year was the abundance of fuel, dead dry willow shrubs and heather, and it will be possible considerably to reduce the weight of liquid fuel carried: at the same time it should be remembered that last year there was exceptionally little rain, and everything burnt easily. It is easy to underestimate the difficulty of some of the scree slopes encountered: it was noticed that, while many of the rocks and boulders on the scree traversed were moss-covered and were obviously set firmly, much of it was raw and recently formed, and a whole slope would begin to move unpleasantly as we crossed it. The least one might fear is a broken ankle, a serious matter when it happens away inland. It should be mentioned that nearly every night, when a sharp frost started to crack the rocks high up on the steep slopes, we could hear large avalanches of rocks and cliff, and often saw these occurring in the daytime: on the very steep walls of the plateau whole cliffs would fall away, an impressive sight from a distance but one that urged caution in climbing.

APPENDIX: VEGETATION AND FAUNA OF THE SARFARTOK RIVER DISTRICT, WEST GREENLAND

M. J. Dunbar

There are two distinct vegetative regions in the area surveyed, separated by the river itself. The abundance of small streams from the mountains on the south side of the river gives rise to a rich low vegetation, with a foundation of moss and grass. Crowberry and Blaeberry are abundant, especially the former. Above these comes the Arctic Willow scrub, varying in height from 9 inches to 3 feet. Cotton grass occurs occasionally in this damp region, but it is not plentiful compared with the crop found nearer the coast at Holsteinsborg. The north side of the river, from the curtain hill to the entry of Clearwater river, is very dry, and supports only a few xerophytic grasses, including Festuca. On the tops of the windswept mountain the conditions are again dry. There is no Willow scrub, and the Crowberry and Blaeberry become scarce. There is an abundance of moss and lichen mats.

The Snow Bunting (*Plectophenax nivalis*) is seen everywhere, and is the sparrow of the country. Next in number comes the Greenland Wheatear (*Oenanthe oenanthe, sub-species leucorrhoa*). The Redpolls (*Carduelis linaria rostrata*) and Lapland Buntings (*Calcarius lapponicus*) are common in the valley, but are not seen higher up. The Ptarmigan (*Lagopus mutus*) keep above the 2000-foot level at this time of year; some dozen pairs were seen during the survey. The Arctic Hare (*Lepus groenlandicus*) has the same distribution as the Ptarmigan, and keeps to the drier country. Ravens were heard almost every day, and were always seen in pairs. A pair of Peregrine falcons (*Falco peregrinus anatum*) was seen on three occasions, opposite the entry of Clearwater river, while round the curtain hill, a pair of White-tailed Sea-eagles (*Haliatus albicilla groenlandicus*) had established their territory. There were very few signs of fish in the Sarfartok river or its tributaries; a very occasional rise, possibly sea-trout, was seen in the main river, but the water is too thick with glacial silt to be considered an ideal habitat for any kind of fish. This no doubt accounts, too, for the lack of fish in Clearwater river, which looks like a perfect trout-stream. Before the fish could reach the river they would have to travel up 9 miles of the Sarfartok river, as well as some distance of muddy fjord.

DISCUSSION

Before the paper the PRESIDENT (Major-General Sir PERCY COX) said: My lord, ladies and gentlemen, the paper we are going to have from Mr. Hayward is on "Surveys in West Greenland." In June 1935, Mr. Hayward took a party of undergraduates on a survey of the west coast of Greenland which lasted four months. They organized this expedition entirely on their own resources. We as a Society were interested, and we are interested, but we were not asked in this case to make any contribution to the cost, and the party deserve a tribute for being able to get on without extraneous assistance. I will ask Mr. Hayward to read his paper.

Mr. Hayward then read the paper printed above, and a discussion followed.

The PRESIDENT: Mr. Mott, would you like to add a few words? We should very much like to hear you.

Mr. P. G. MOTT: I find myself in the fortunate—or perhaps I should say unfortunate—position that Mr. Hayward has left me practically nothing to say. He has given you a full and most excellent account of the expedition which he led so splendidly last year, and he has also provided you with a summary of our plans for this summer to continue, enlarge on, and to a certain extent check, the results obtained last year. Provided nothing unforeseen occurs, we shall have three distinct advantages this summer over last. In the first place, we know what the country looks like. Secondly, we shall have at least double the time to carry out the work in hand. Thirdly, we shall have six men instead of four, so that we shall be able to have two survey units working at different stations at the same time.

To counteract these advantages we shall have more than double the distance to go before we can even begin to do useful work. We shall have to take supplies for six weeks to the farthest point inland reached last year. As it is probable that two members of the survey party will be arriving a month later it will mean that four men during the first month will have to do the work of six, which, from last year's experience, will be no mean job. But I am confident that we shall win through to Lake Tasersiak and bring back with us a fair map of this exceedingly fascinating district which has remained unknown to all except a few Eskimo hunters after caribou. In addition this year we are taking with us a zoological unit, which it is to be hoped will add considerably to the results of the expedition. The unit will consist of three members and will work independently of the inland survey party. They will spend the first month on the coast and then proceed to the head of the fjord.

If you will allow me to add a few words more I would like to pay a personal tribute to Mr. Hayward himself. I do not intend to embarrass him more than I can help with undue compliments in his presence, but one thing lacking in an otherwise exhaustive dissertation was a reference to the personal difficulties which he himself had to undergo and overcome. I believe I am correct in saying that we were the youngest and most inexperienced expedition which had ever set out for isolated travel in an arctic region. Apart from Atter, who had been on a climbing expedition the previous summer, no one of us had ever attempted anything of this kind. Atter was the only man who had been farther north than Scotland. For my own part I shocked my companions on arrival in Greenland by telling them that I had never slept under canvas before. The average age of the party was twenty-one. Two of the members actually celebrated their twenty-first birthday while away. We none of us had the least idea of what the country was like beyond what we had gathered from a rather sketchy account in a book published in 1928 on an expedition to a neighbouring district.

All these problems we had to deal with in making preparations and on arrival. The decisions Mr. Hayward had to make were momentous to the results and well-being of the whole expedition.

My task this year is a featherweight compared with that which confronted Hayward last summer. He led the way and I have but to follow in his footsteps. I now know the method of procedure, the type of country, and the difficulties confronting a surveyor of these parts, which Mr. Hayward has described to you in some detail. No credit for this information is due to me, but to Hayward, who worked it out for himself, and then demonstrated it to us.

Taking into account the time at our disposal and the conditions we met with, I consider we covered as much ground as could possibly have been achieved in the time. Apart from the totally unlooked for and distressing tragedy which deprived us of an irreplaceable companion, no one of us was ever ill, short of food, or in any danger whatever. This was a pretty good record for such an inexperienced party. With a much lighter task, I shall only try to carry out my duties this year with the success of my admirable predecessor.

One last word. May I take this opportunity of thanking the Royal Geographical Society for the support they have given to the expedition this year. We feel it a great honour, and at the same time a great responsibility to have the backing of so learned a Society behind us.

The PRESIDENT: Dr. Sandford, will you add a few words? Dr. Sandford is Senior Treasurer of the Oxford University Exploration Club and had much to do with the organization of this expedition. He is a Member of our Council, and of the University Staff at Oxford.

Dr. K. S. SANDFORD: I saw something of the organization of this expedition, and I was much impressed at the time by the way in which it was organized. It was done quietly, quickly, and, as you will have seen, efficiently. I do not think they left behind anything they really wanted, and they did not take much gear that they did not use. They went and did a good job, and when they came home they did not make a great deal of fuss about it. I think that is a good record for an expedition of this sort.

Another point that pleased me as treasurer of the Oxford University Exploration Club was the finance. When I was a small boy my mother tried to teach me some elementary finance; she always said, "Pay as you go; if you can't pay, don't go." That is a good motto for an expedition of this sort, though you cannot carry it to its logical conclusion. But it is, I think, a much better rule than running up enormous overdrafts. This expedition financed itself in a quite modest way before it left the country, and on clearing up on its return there were no unpaid bills and no adverse balance.

Lastly, I congratulate them on the mapping. It would have been easy for a party to have gone there and wasted their limited time in fixing accurately their position, scale, and altitude, and having done that, to have achieved very little more. I think they were quite right to make their map and to get on paper as much of their country as they could, knowing that it was then only a matter of fixing subsequently this map and verifying its scales, which can be done this year.

The PRESIDENT: We should like to have a few words from Dr. Longstaff.

Dr. T. G. LONGSTAFF: We have all been very sorry to hear about the great loss which this expedition suffered in the death of one of its members. But this is only the second death we have had on these Oxford expeditions, while one hundred or more men have taken part in them. It is not a high price to pay, though it is a specially grievous one in this instance. Adventure is impossible without risk.

I want to congratulate the party on carrying through efficiently with very little money, which they raised themselves. It is an example of what personal capacity can accomplish. The mental equipment of the traveller is much more important than his material resources. What was the total expenditure?

Mr. HAYWARD: The total expenditure worked out at £100 a head.

Dr. LONGSTAFF: I think, really, that is on the extravagant side, and they ought to have done it for £90! I first heard of this ground in 1930 when I was out there with my daughter. The Danes assured me that this large area, which is some 3000 square miles of ice-free country, was quite unknown to Europeans but that one family of Greenlanders—Eskimo—used to go in on the north side, taking a kayak, so that it seems there is another way to the north, and if the Clear-water stream comes from the north it may come from the "kayak" lake while the coffee-coloured river comes from the great lake by the edge of the Inland Ice. The Danes assured me however that it was unmapped country. I got that from the Hydrographical Department at Copenhagen, who gave me all the information they had. No surveying had been done, so that the expedition we have heard of this evening, and Mr. Mott's which is going out there this summer, are exploring ground which is new to geographers.

I want to beg of Mr. Mott one thing. His party is necessarily going to diverge. Naturally the survey parties will diverge one from the other, getting farther and farther apart. When it is time to come back I think it is worth while giving up a little for safety. So far as is possible let each party return along the road it has come up by, so that the parties will converge and meet at the earliest possible point. Everybody then knows the route out. If you let your parties diverge, and then make a circle through new country, trying to return by a different route, you do run a pretty considerable risk should any minor accident occur. If somebody sprains an ankle or breaks a leg, the difficulty is greatly minimized if you insist on your divergent surveying parties always returning along the same track as they went out by so as to converge on a common road of exit. I know that up in the country north and south of this region, where I have been, it is very hard and rough going. These men will necessarily be carrying very heavy loads. It is easy to make a slip and cut oneself badly, or have a sprain, very easy to come to small harm, and small harm there in such a situation may mean much more trouble than it would in ordinary circumstances. We have to bear in mind that their farthest point is limited by the amount of food, plus their instruments, they can carry on their own backs. Keenness makes men run things fine. A known road invariably gives quicker escape than an unknown one.

The PRESIDENT: In the first place you will wish to join with me in expressing our great sympathy with Mr. Hayward and Mr. Mott at the thought that this very efficient and otherwise successful little expedition should have to be accompanied in their memory by the shadow of the loss of a very fine young comrade. I offer them our deep sympathy. You have heard Dr. Sandford and Dr. Longstaff speak, both of them well qualified to assess the value of this expedition. It has been very successful and well carried out, and we hope that during this coming summer Mr. Mott will be able to continue the good work he and Mr. Hayward did last year.

With regard to the question of taking sufficient or too much gear with them, I could not help being reminded by what Dr. Longstaff said of my own position half a century ago when, rather in the wilds, exploring parties instead of leaving their spare stuff on the beach, presented it to me and mine in return for our mild hospitality. Such presents consisted mainly of a large store of Keating's insect powder, and Quaker oats in sufficient quantity to have fed an army for six months!

Well, we have had a very well-delivered and interesting paper from Mr. Hayward, and we have also to thank Mr. Mott for his welcome addition to the proceedings of the afternoon. I ask you to join with me in thanking them both very cordially.

The vote of thanks was accorded by acclamation, and the meeting terminated.

INTERNAL DEVELOPMENT OF THE U.S.S.R.

IN the reorganization carried on by the central government of the U.S.S.R. the changing of place-names and the redistribution of administrative areas and departments have played a large part. The alteration of names marks in many, if not most, cases an ideological change: and the most frequent instances are those of places named after former Tsars or famous generals of the old empire, which are gradually being renamed after great figures of the Bolshevist Revolution and the years that have followed. The murder of Kirov, for instance, caused a large number of place-names to be altered and the name Kirov, Kirovo, or some such derivative, to be given to places which hitherto bore names colourless or—as in the case of Zinovievsk—of evil memory. In other cases the change has been introduced to encourage the local language and to undo the process of russification previously carried on by the Tsarist government. Thus Verkhneudinsk in Siberia is changed to Ulan-Ude; and Vladikavkaz, the old seat of the centralizing Russian domination of the Caucasus, has become Ordzhonikidze in honour of the Georgian leader who played such a large part in the revolution. Acting on the same principles the central government has also begun to assign to non-Russian districts which have become sufficiently developed and have shown their loyalty to the principles of the revolution, the status of Autonomous Soviet Socialist Republics. Three of these new Autonomous Republics were created in 1935 alone: the Mordovian A.S.S.R. (cap. Saransk) and the Udmurt A.S.S.R. (cap. Ijevsk) in January, and a Kalmik A.S.S.R. in November.

Great activities in road and bridge building have been reported in 1935–36. In September 1935 a new road was completed from Stalinbad to Ura-Tobe in North Tajikistan, a distance of 280 kms., reducing the journey from Stalinbad to Tashkent to fifteen instead of forty-eight hours. In October a gravel road was completed between Samarkand and Penjikent. A few months before (May) the first road in the Pamirs to be open to motor traffic was completed between Khorog, the capital of the Badakhstan A.S.S.R. and Osh. Other roads reported as finished are those between Shuroabad–Jildin Jamgata, Muminabad–Lyangar Kolon, both in Tajikistan; and roads from Vladivostok–Khabarovsk and from Bisk, through Kurai, across the Altai. Most important of all is a road 488 kms. long from Karaganda–lake Balkash, which will facilitate the development of the new copper works near the lake. In December 1935 reports were received of a new canal connecting the Don with the Caspian Sea and making use of the West and East Manich rivers, the prehistoric link between the Azov and Caspian Seas. The canal is 700 kms. long and has seven locks. The level of both rivers has to be raised, and an

auxiliary canal is therefore being constructed from some point on the river Kuban to feed an artificial lake on the watershed of the main canal and irrigate 480,000 hectares of hitherto waterless land. In September 1935 reports were received that work is proceeding on the Moscow–Volga Canal, and it was claimed that the canal would be ready for use by the planned date, *i.e.* the opening of the 1937 navigation season. This canal will not only provide a directer and more serviceable waterway between Moscow and the upper reaches of the Volga, but it will also greatly increase Moscow's existing water supply. It forms part of the canal system by which it is planned to connect the seas to the north and south of the U.S.S.R. Steps are also being taken to widen, deepen, and in every respect modernize the Volga–Baltic Canal. The section between Leningrad and the point where the river Sheksna issues from White Lake (*Beloe Ozero*) is being reconstructed; and the river Svir, which flows between lakes Onega and Ladoga and on which one hydro-electric station has already been built and a second started, is being "reconstructed." The same "reconstruction" will be carried on on the river Sheksna. The canals round lakes Ladoga and Onega are to be deepened and a port to be built at Vitegorsk.

During 1936 635,000,000 roubles are to be spent on building and repair of roads and bridges, and in the course of the year 4000 kms. of new main roads are to be built. In East Siberia and the Caucasus especially many new roads are being begun. Kamchatka and the island of Sakhalin are each being given new built-up roads, and new motor roads are being constructed between Pyatigorsk–Mount Elbruz, and Sochi–Gagri on the Caucasian Riviera. It is hoped also that the Black Sea Coastal Railway will be completed by the end of the year, and that the work begun on the new towns of Bolshoi Krasnoyarsk on the Yenisei and another, yet unnamed, near lake Balkash will have made considerable progress. These two new towns are planned for populations of 400,000 and 48,000 respectively. The dockyards on the Ob, the Yenisei, and the Lena are busy building a river fleet, and last year a party of surveyors was sent to the river Indigirka with the object of constructing a port and so developing river transport.

As long ago as December 1934 air-lines were reported as established between Tyumen–Obdorsk–Novi Port, Krasnoyarsk–Igarka–Dudinka, and Yakutsk–Tiksi. In 1935 air-lines were established from Cape Schmidt to Wellen (Providence Bay), along the coast of the Bering Sea to Anadiz and so to Nagayeva, and a fortnightly service set up between Cape Schmidt and Wrangel Island. In August of the same year it was announced that all ice-breakers were to be under the Central Administration of the Northern Sea Route; and that plans were being made for the development of hydrographic work so that by the end of 1937 nautical charts of the routes might be available, showing the most important approaches to the mouths of the Siberian rivers. In April 1935 it was announced that the four ice-breakers, *Lenin*, *Yermak*, *Litke*, and *Krassin*, had each been allotted a definite section of the arctic sea-route where they were to act as convoy ships to cargo vessels and as bases of scientific work. The Krasnoyarsk–Dudinka air-line was extended to Dickson Island. In August 1935 it was reported that five ships had left port for work in the Arctic. Four of these were to investigate the Arctic sea-route, carrying cargo

between Murmansk and Vladivostok: the *Iskra* and the *Vanzetti* were to make the passage from east to west, the *Anadirii* and the *Stalingrad* from west to east, being accompanied on the most difficult stage of the voyage by the ice-breakers *Krassin* and *Maligin*. The fifth vessel, the *Sadko*, was bound for the more northern part of the Arctic Sea in order to investigate hydrological and meteorological conditions. The route of the *Sadko* was from Archangel to Murmansk, round the west coast of Spitsbergen, east to the north coast of Franz Josef Land, south to the north-east coast of Novaya Zemlya, north again to Nicholas II Land, on to the port of Tiksi, and thence back to Archangel along the coast. A study was to be made of currents, winds, the depth of the ocean floor, and other factors likely to affect the navigation of the trade route, and particular attention paid to the course of the warm currents which find their way into the Asiatic part of the Arctic Sea from the Gulf Stream. It appears that these currents keep for the most part to the submarine valleys and are forced up towards the surface by the configuration of the ocean floor, on an average about 200 km. from the mainland. It has been thought that this may mean that a better and less ice-bound route could be found to the north of the present route: and it is to put this theory to the test that the *Sadko* has been sent out. In October of last year it was reported that the *Sadko* had discovered three new small islands near Nicholas II Land, between Cape Frunze and Cape Litvinov, and that the shallow water in the triangle between Franz Josef Land, Wiese Island, and Nicholas II Land has been charted on the south and west and is now being charted on the east side.

In November 1935 news was received from the ice-breaker *Krassin* in the neighbourhood of Wrangel Island. She had reached lat. 73° 2′ N. without difficulty, although no ship had hitherto passed lat. 71° N. Meeting heavy ice she turned south, where conditions were better. This was on September 8. Two days later she turned north again and this time reached lat. 73° 30′ N.; she then headed for Herald Island. It was discovered that from south to north along the meridian of Herald Island there runs a deep trough. The scheme of the currents in this tract was mapped, and a whole series of whirlpools and eddies which are the result of the cold current from the west meeting the warm current moving north-west. It was ascertained that a warm current is present where the continental shallow ledge begins deepening at lat. 73° 3′ N. at a depth of below 150 metres. Judging by the temperature, saline content, etc., the current emanates from the Atlantic.

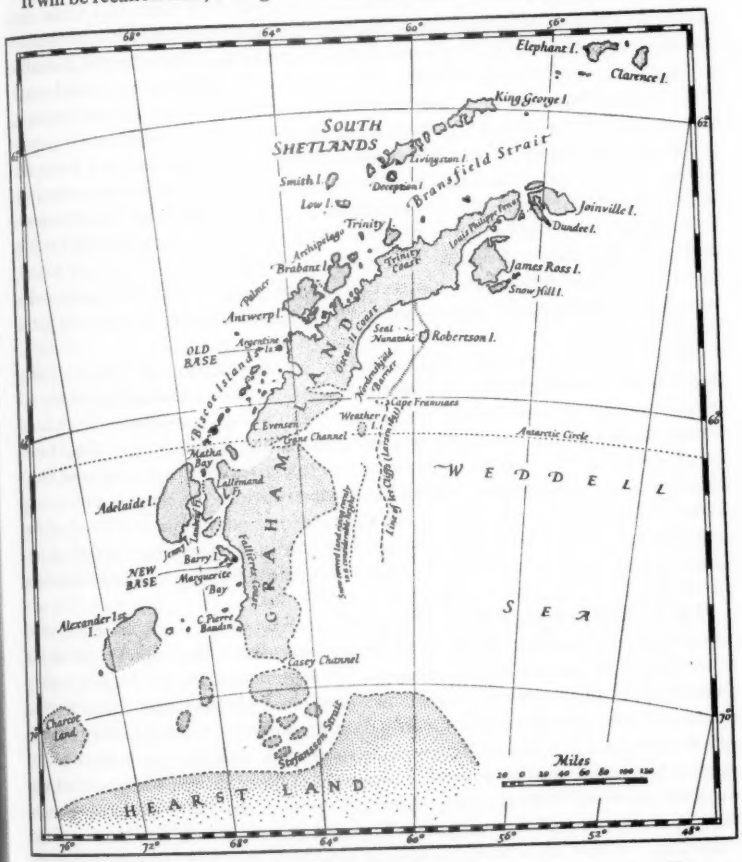
In March 1936 five new Polar Stations were established. One at Blagopoluchia Bay is especially designed for the study of hydrological conditions in the Kara Sea: the other four are at de Long Islands, Kotelni Island, Cape Chaplin, and Mount Cherski. A new expedition to the Pamirs was announced for 1936. The objects as stated officially are the training of leaders for other expeditions, and the geographical survey of the West Pamirs.

We are indebted to the Foreign Office, whose prompt transmission to the Society of information supplied by the British Ambassador in Moscow has made it possible to compile this summary.

THE BRITISH GRAHAM LAND EXPEDITION

THE following article on the scientific work accomplished by the British Graham Land Expedition has been compiled from a series of short reports on the first year's work brought back by the *Penola* on her return to the Falkland Islands in March 1936.

It will be recalled that, owing to trouble with the engines, the Expedition had



to be satisfied with winter quarters at the Argentine Islands on the Western side of Graham Land in lat. 65° 15′ S., about seven miles south of Dr. Charcot's base in the *Pourquoi Pas?* in 1909–10, and much farther north than originally planned. Exploration work in the larger geographical sense was therefore restricted, since the coast opposite the base was inaccessible for the greater part of the year, the sea ice not being safe for sledge travel except for a few weeks during which an attempt was made to get to the South. The sledge

expedition had to turn back from Cape Evensen in 66° 12′ on account of the insecure sea ice.

The survey work therefore has been in part more local than was expected, but all the more detailed in consequence. A theodolite triangulation of the Argentine group was made and the detail completed to the scale of 1/100,000 with the plane table. The group extends for ten miles in an east to west direction and consists of a very large number of small islands. The group of three islands where the base was situated was mapped on a scale of 1/6,600, and Stella Creek, the anchorage, was hydrographically surveyed since it appears to afford excellent shelter for a vessel wintering in that latitude. On a smaller scale is the survey of the coast line of what may be called the mainland, made from the islands and from the air for eighty miles down to Cape Evensen. Along this stretch of coast, though there are many bays, the plateau is practically inaccessible, for it rises to a height of about 8000 feet within a few miles of the coast. Some of the islands off the shore themselves rise to over 2000 feet, while many mountain peaks of over 5000 feet overlook the bays. A determined attempt was made last summer to reach the plateau but was foiled by ice falls and avalanche slopes. A flight by Hampton and Stephenson from Barry Island, the new base in 68° 10′ S., has recently been made in order to reconnoitre routes for extending this coastal survey from Cape Evensen southwards to the new base.

Meteorology at the base was carried on by Stephenson and Riley with a detail approximating to that of a first-class station. The meteorological instruments were set up close to the hut at a height of 110 feet above sea level, from which there was good visibility in all directions and freedom from local topographical influence. Visual observations were made five times a day and these were continued for eleven months without interruption, and the usual recording instruments were in commission for the same period. A brief résumé of the results shows that Mr. Rymill's party had a colder winter in 1935 than Dr. Charcot had in 1909, and that one of the factors controlling local weather may be the position and extent of the main pack ice.

The geology and glaciology has been undertaken by W. L. S. Fleming, who reports that the position of the base was unfortunate in that along most of the coast line there are few rock exposures. The interest of the geology is mainly petrological; all the outcrops visited consisted of plutonic and metamorphic types of rock. The geologist therefore spent much of his field work on the glaciological problems and has come across much evidence for a more widespread glaciation than at present. Soundings have shown that most of the bays are drowned glacial valleys, now submerged. In some of the bays also there are floating glacier tongues. The small ice caps of the larger of the Argentine Islands have received special attention, and careful measurements may give an explanation of their curious form. Several members of the Expedition have joined in making observations of the characteristics of the sea ice in that locality.

In the field of biology the circumstances of the base were such that a detailed investigation of the Antarctic seals was found to be the most fruitful line of research for Bertram, the chief biologist. The measurements taken of seals, together with a dissection of their bodies, have made it possible to define the

growth rates accurately, especially in the cases of the Weddell and Crab-eater seals which are proved to reach their maximum size in their fourth and fifth years respectively. The work is being undertaken with the object of providing data for a sound judgment of the feasibility and permissible extent of any commercial exploitation of these seals. Local conditions were not very favourable to detailed plankton investigation but some work was undertaken. The range of botanical specimens on the Argentine Islands proved to be larger than was anticipated, and Bertram has made a comprehensive collection of lichens.

Roberts, as ornithologist, was always busy and his careful record of all birds seen is being made with the general purpose of plotting the distribution of the birds of the South Atlantic. A colony of Wilson Petrels was discovered near the base and a detailed study made of their life history. Many burrows were excavated so that the birds could be examined daily without disturbance, and the result is a thorough study of their habits from the time of their arrival at the colony until their northward migration. Stomach analyses were made to elucidate the food problem, and the ringing of individual birds soon after arrival also gave results of interest.

The hydrographical work by Lieutenant Ryder, the Captain of *Penola*, is the subject of a long and interesting report, too detailed for insertion in this note. It deals carefully with navigation amongst the islands and with the tides, of which a record for thirty-two consecutive weeks by automatic gauge was obtained. There are careful directions for entering Stella Creek with full notes about its suitability as an anchorage. It is interesting to note that open water reached Crulls Island, the outermost of the Argentine group, about fifteen miles from the mainland, as early as 26 September, although it was frequently beset by pack ice up to January.

For its second winter in the South the Expedition has a base on a group of six small islands in Marguerite Bay close to the Fallières coast of Dr. Charcot's maps and about twenty miles north of a low barrier formation. Provided that no undue difficulty is experienced with the sea ice, the new headquarters should be an ideal base for the sledging expeditions to the south. If, as seems possible, the barrier formation can be used for these journeys, good distances should be made, and there seems no reason why the main outlines of the geography of the southern end of the Graham Land Peninsula or Archipelago should not be settled once for all during the next southern summer. Already the Expedition has seen from the air that Alexander I Island appears to be part of the mainland, and it is possible that Rymill will make at least one sledge journey to establish that fact. At the same time his main journey, if conditions are favourable, will probably be towards the south-east to investigate Stefansson Strait and the coast of Hearst Land where it faces the Weddell Sea, if possible as far as Filchner's Barrier.

REVIEWS

EUROPE

GRAND TOUR: A Journey in the Tracks of the Age of Aristocracy. Edited by R. S. LAMBERT. *London: Faber and Faber* 1935. 9×5½ *inches;* 168 *pages; illustrations and map.* 10*s* 6*d*

A SCOT OVER THE BORDER. By IAIN F. ANDERSON. *London: Herbert Jenkins* 1935. 8×5 *inches;* 222 *pages; illustrations and route-map.* 7*s* 6*d*

ENGLAND ALL THE WAY. By JAMES TURLE. *London: Constable & Co.* 1935. 7½×5 *inches;* xiv+326 *pages; illustration.* 7*s* 6*d*

The inspiration which prompted the collection of essays published under the title 'Grand Tour' was excellent. That institution was an important factor in the formation of English public opinion during several centuries, and from that point of view is deserving of study. The essayists have concentrated upon the conditions of travel in the countries included in the tour (there would seem to be some justification for the inclusion of Spain, here omitted), the sights popular with the travellers, and their attitude to the foreigners they encountered. There seems however, despite the editor's introduction, to be some misconception of the essence of the "grand tour." It was, first and foremost, educational: the young men were sent abroad, as Bacon notes, "to be trained up and made fit for such public employments, and to learn the languages." Few examples of this educational method appear in these pages: instead, there are travellers journeying for a variety of reasons. Col. Beaufoy, the first Englishman to go up Mont Blanc, is perhaps one of the most unexpected of these "grand tourists." However if the reader does not inquire too closely into the justification for these pages, he will find much to entertain him. Mr. Sacheverell Sitwell's essay on the changes in artistic standards is enlightening; it is the sole attempt to trace the influence of the "grand tour"—"which defeated any tendency the English may ever have had towards the rococo, and was responsible for instance for all that phase of interior decoration which is associated with the brothers Adam." The other two books have a less general appeal, and are not the work of so practised writers.

Mr. Anderson's is an unpretentious account of a motor tour through England, enlivened by an occasional fresh comment. These however scarcely seem to justify the publication of the book.

Mr. Turle has apparently won an audience for his particular type of book, which will welcome his second discursive commentary on the English countryside. It may be described as a "commonplace book" of extracts from Defoe, Borrow, and similar classics, interspersed with anecdotes of his encounters with picturesque individuals on English bye-ways, and snatches of local lore and personal musings—a book to be dipped into at intervals, with the certainty of finding something of interest. It is, perhaps inevitably for a work of this character, a lament for the past, and those readers who share the writer's moods will welcome a book rather less conventional than much recent literature on the English countryside. G. R. C.

TRIP-TYQUE. By CHARLES GRAVES. *London: Ivor Nicholson and Watson* 1936. 8½×5½ *inches;* 240 *pages; illustrations and route-map.* 10*s* 6*d*

Mr. Graves spreads his words pleasantly over the page, persuading the reader that he too is nicely sophisticated. The author describes what happened when he spent a fortnight's holiday in Spain with a fine car and a poor phrase-book.

Quite properly he warns us that he is no Baedeker, and ingenuously tells us that he aspires to the style of Mark Twain. The conditions under which Mr. Graves travelled prevented any notable incidents, and his vignettes of strangers are very slight because he could not follow their conversation. Consequently he must be complimented on writing such a book without recourse to historical padding. His own special interest seems to be food and the chatter which his chauffeur picked up in back alleys. One-tenth of the book describes the single bull-fight he saw, helped out by explanations from "Death in the Afternoon" and professional newspaper criticism.

Taste in travel books is irrational. This strangely titled book will appeal to those who know little about Spain yet like to feel tolerant about it. Mr. Graves' admirers will be glad he has "done it again"; his critics will vainly ask, "Why ?"

E. H. G. D.

LES LACS DES PYRÉNÉES FRANÇAISES. By the Abbé Ludovic Gaurier. *Toulouse: Edouard Privat—Paris: Henri Didier* 1934. $9\frac{1}{2} \times 7\frac{1}{2}$ *inches; 312 pages; illustrations and sketch-maps. 60 fr.*

The untimely death of the Abbé Gaurier in 1931 interrupted his programme of publications on the geography of the French Pyrénées. At the invitation of the Minister of Public Works he had spent some part of every year since 1905 in exploring the economic possibilities of the valleys and the lakes and in climbing and camping amongst the mountains that he knew so well. The preparation of the present volume has been a labour of love and remembrance on the part of some of his friends in the Service Hydraulique du Sud-Ouest, who with the help of M. E. A. Martel, Hon. President of the Société de Géographie, have compiled it from notes amongst the Abbé's papers. It lacks the touch of the master's hand and the considered judgment of the illustrious savant, but it is full of interesting and valuable information about the lakes of the French Pyrénées, and especially about those in the basin of the Gave du Pau.

It was the Comte Russell who asked in 1865, "How many lakes are there in the Pyrénées? Who has seen them all?" L. de Launay, in his 'Géologie de la France' (1921), ventured to reply that there were very few waterfalls and lakes in the Pyrénées. The Abbé set himself to remove this slur upon his beloved mountains, and up to the date of his death he had tabulated more than 520 lakes and tarns between the valley of the Aspe and the sources of the Aude. Great valley lakes like those of Switzerland, Italy, and the eastern Alps are absent, but quantity takes the place of size and provides a greater number of points of interest and investigation.

The Abbé was no armchair geographer. The mountains were his life and his joy. He had personally visited and explored all the lakes upon his list and examined the details of their structure and formation. He possessed the inward eye of the scientist, and his interests extended beyond the capacity and suitability of the lakes for the storage of the "white coal of civilization" to questions of their origin and development. Hence it is with some avidity that one peruses the chapters and the paragraphs which recount the Abbé's opinions upon certain problems of limnology.

Being naturally a supporter of the French school of geography, the Abbé was something of an antiglacialist. He believed that ice and water had worked together in the excavation of valleys in glaciated regions, but that the principal rôle had been played by the latter and not by the former. It is difficult to believe however that he was altogether serious in his argument that the shallow depth of ice striations indicates the general feebleness of glacier erosion. The work done by the rasp cannot usually be gauged by the markings on the bar. He was

on safer ground perhaps when he pointed to the distribution of the ancient moraines within the valleys and to the occurrence of partially glaciated inequalities on their floors.

According to Reclus the Pyrénées are the true type of a simple mountain range with a single crestline and transverse valleys descending by the shortest lines to the plains below. According to Penck and Brückner the valleys of the Pyrénées were excavated by moving ice during the Ice Age. According to the Abbé they were cut by running water along lines of weakness long before the Ice Age. The great glaciers of the Pleistocene glaciation had occupied the valleys and transported much debris, but had little to do with the general sculpture of the range. The Ossau glacier had then a length of 80 km., equal to the longest existing glacier of the Himalayas. Now it has dwindled to 2 km. Similarly the Rhône glacier during the Ice Age reached as far as Lyons, a length of 460 km., while the Aletch glacier, now the longest in Europe, does not exceed 24 km.

However that may be, or perhaps with a gesture of general agreement about the potency of sub-glacial waters, we join the Abbé in his search for a sufficient cause of the mountain lakes and tarns and the overdeepened portions of the middle valleys, now usually transformed into flats. It had been said that there were no lakes in the Pyrénées above 1500 m., but this the Abbé easily disproved. He also discovered that some of the deepest lakes occur amongst the peaks of the mountains. The staircase lakes of the Soussouéou, the largest affluent of the Gave d'Ossau, are a case in point. The lakes occupy successive platforms along the line of the valley, separated by steep declivities of 300–400 m. in height. The risers and the treads of the staircase are equally glaciated, the lakes being overdeepened portions of the treads with the sides and floors well smoothed and striated, sometimes in a vertical direction, and closed at the lower ends by upward slopes (*contrepentes*) of varying inclination. The highest lake, the Lac d'Arrémoulit, situated at an elevation of 2350 m. amongst the summits of the range, covers more than 6 hectares and has a depth of 65 m. The Lac d'Artouste, at an elevation of 2000 m., has an area of 39 hectares and a depth of 85 m. These lakes are true rock basins, but the Abbé rejected any action by running water or by glacier ice in their formation owing, in his opinion, to the feeble erosive power of these agents at the heights at which the lakes occur. He believed in the protective action of snow and ice at high altitudes, and thus deprived himself of any assistance they might have offered in the solution of the problem with which he was confronted.

So the Abbé suggested, perhaps somewhat hastily, that the lakes in question were of tectonic origin, the basins being remnants of hollows and fissures formed during the elevation and folding of the mountains and the intrusion of the granitic core. Definite evidence of such an origin would naturally be difficult to obtain. One feels also that when the Abbé pointed to the fantastic plications of the Vignemal and the Pics d'Estibère and de la Tourette in support of his suggestion, he was addressing the man in the street rather than his fellow-scientists. The superficial hollows and chasms of Tertiary foldings and fractures could hardly have persisted through the ages to become the rock basins of the present day. The difficulty must have been obvious to the Abbé, but the notes that he left behind dealt only with the beginnings of his dissertation.

Thus the Abbé's work is incomplete. He had discovered for himself the problem of the cascade-stairway, so vaguely treated in the text-books, and he had added to the problem by demonstrating the great depth of the higher lakes but he had not arrived at any acceptable solution. It is regrettable that his investigations came so abruptly to a close, and that we have been deprived of the final convictions of his penetrating and independent mind. His work however

has emphasized the need of further study of the distribution and origin of the deep basins of glaciated mountains, and the search for further data might well be undertaken by scientific youth.

In any such quest within the limits of the French Pyrénées the present volume will be an invaluable guide. The greater part of it consists of the Abbé's notes on the physical features of the lakes, their situation and mode of access, their elevation, depth, volume, area, etc., the ingress and egress of the waters and the characteristics of the bars, the outlets, and the floors. It thus constitutes a permanent record of special use and value to those who are concerned with the hydro-electric development of the region. The devoted work of the compilers in arranging, classifying, and editing the Abbé's notes deserves great commendation. J. D. F.

MALAXBYGDEN (Les hommes et leurs travaux dans le pays de Malax pendant les quatre derniers siècles.) By HELMER SMEDS. *Helsingfors: Ernst Ingelius* 1935. $9\frac{1}{2} \times 7$ *inches;* xvi, 452+4 *pages; illustrations and maps*

This book deals with the settlement and rural economy of the southern half of the district in Finland known as Swedish Österbotten. After a short survey of the geological history and of the natural changes in the landscape, such as land elevation, delta formation, degeneration to bog, etc., the author proceeds to a brief historical description of its inhabitation by man. Traces of population are found from A.D. 200 to A.D. 800, but after this the region appears to have been deserted until about 1200, when colonization from Sweden began.

After 1500 records become fairly full and the author is able to describe in great detail all the changes in the population and its way of living and the consequent effects upon the countryside. Particular attention is paid to two parishes, Malax and Bergö, the former an inland and mainly agricultural settlement, the latter an island in the archipelago, where fishing is of prime importance.

An interesting feature of the Swedish cultivation has been a persistent tendency to over-population, which became so severe in the sixteenth century that Gustav Vasa was constrained to offer advice for its relief. In the 1880's emigration to the U.S.A. more than relieved this pressure and set in motion a train of events which finally revolutionized agricultural economy.

This admirable and painstaking work is freely illustrated by maps and tables. The author would have earned still more of our gratitude if he had added, not only a French summary, but also an index. M. S.

ASIA

MY COUNTRY AND MY PEOPLE. By LIN YUTANG. *London: William Heinemann* 1936. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* xviii+364 *pages; illustrations.* 15*s*

This book is an attempt by a Chinese to present a definite picture of Chinese life and culture as it exists to-day. The attempt is extremely daring, but the author is justified as he has succeeded in turning what might have been more or less a literary *tour de force* into a definite appreciation of what China means to the Chinese people. "Country" in the title means *patria*, not the land in the geographical sense, but the field covered is extremely wide and includes both those aspects of a people's life usually included under that much abused word *Kultur* and also the ordinary everyday happenings of normal life, whether political, artistic, or literary; but not on the whole the life of humble struggling coolie, though he too has his place in the author's extremely wide survey of things Chinese. Mr. Lin also attempts certain comparisons with the West,

but he is less happy in these comparisons, probably because there is less unity in Western culture than there is in Chinese culture, in spite of the diversities of the latter. When for example he says that "without that scientific outlook, and with a large share of humour and common sense, the Chinese must necessarily consider the study and observation of the life of an earthworm or of a goldfish as beneath the dignity of a scholar" he forgets quite a large proportion of the learned outside China, also endowed with a large share of humour and common sense, have an entirely similar idea of the dignity of a scholar. In fact as far as a foreigner can judge Mr. Lin gives an extraordinarily vivid and interesting picture of Chinese life to-day as seen through the eyes of a Chinese who, while thoroughly grounded in Chinese tradition, has also adopted modernist views. He fails in comparisons with the West just as we fail when we attempt to compare our own civilization with that of China. Such comparisons however occupy only a small part of the book, which should prove of great interest and value to all who are interested in the life of modern China and its traditional background. It would probably have helped many readers if it had been possible to include an outline map showing where the places mentioned are and a chronological table of the various authors referred to, as the mere list of Chinese dynasties is not a sufficient guide to most of us. I. H. D. B.

CAMEL-BELLS OF BAGHDAD. By JANET MILLER. *London: Putnam & Co.* 1935. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* vii+299 *pages; illustrations and end-paper map.* 10*s* 6*d*

This book advertises the story of "an adventurous journey to the City of the Arabian Nights, the Tower of Babel, the Garden of Eden . . . and the Mountains and Deserts of Persia," but, as the title suggests, the authoress is strongly imbued with the so-called romance of the East rather than with the desire for serious travel. However, Dr. Janet Miller set forth for Baghdad, instead of to Abyssinia—as was her original intention, and thereby missed the opportunity of her lifetime! But with Baghdad she was thrilled; the Garden of Eden was seen from the back seat of a car, and the camel-bells were drowned by the hoots of a motor horn. Eventually she went to Tehran, also, of course, by car, and this with a "flight" to Isfahan, a few days in Shiraz, a trip to the Caspian and to Meshed, constitutes the whole adventure. There are a few illustrations and end-paper sketch-maps. D. C.

NANDA DEVI. By E. E. SHIPTON. *London: Hodder and Stoughton* 1936. $9 \times 5\frac{1}{2}$ *inches;* xvi+310 *pages; illustrations.* 15*s*

This is a remarkable book. Perhaps a new classic has appeared. Tilman had long leave from Kenya: he bought a second-hand bicycle; rode it across Africa to the West Coast, where perhaps prices were better, and sold the bicycle to buy a passage home on a tramp. He joined his old climbing companion Shipton and they started off on a pleasure trip to the Himalaya which lasted about seven months—for a combined cost of less than £300. Their companions were three Sherpas, who had been on Everest with Shipton in 1933, making an ideal party for any Himalayan objective whose chief aim is happiness and the joy of adventure. Owing to its flexibility a small party is bound to get more success for its money than a big expedition, loaded with transport to the point of immobility and almost without power to alter its route when the unforeseen and the unknown demand a change of plan if disappointment or waste of time is to be avoided. Another boon is that the sparse local hill population is not scared out of its wits by the ramifying terrors of a vast invasion of their privacy. The traveller can make contact with them as they really are. Perhaps it is the friendly appreciation of the faults and virtues of the villager, combined with the uniform respect for

religious opinion and appreciation for acquaintance with men like Ram Serikh Singh, that leaves us with such a sense of confidence that Shipton and his companions have left behind them that good impression which is so vital to the pleasure of any one who may follow after.

In the author's preface Shipton tells us that the book is a joint effort with Tilman, to whom he dedicates it. In this respect it is a remarkable achievement as literature, for it appears to be written all by the same hand. The two companions must be attuned to one another in an unusual degree. This harmony goes much farther. Throughout the book there is an all-too-rare sense of peace, not strife. Again and again appears a harmony of unity with nature rather than of warfare against it. The reality of the adventure was no less wonderful to Shipton than the dream of it: and this consummation is rare. Lucky are those few who attain complete enjoyment of the continuing present, not compelled by the before and after looking spirit of unrest to miss the deep content attained by these adventurers. The idea of "conquest" of Nature by man is here mercifully omitted: indeed, they actually seem to be grateful to Nature for allowing them to behold her secret places. And yet the physical difficulties they overcame were very great. Their food was almost confined to native grains, often insufficient and in bad condition, eked out with bamboo shoots, wild garlic, and fungus. Both had illnesses while compelled to dour conditions of life. Always they carried great loads, frequently completely sodden and overweighted by drenching rain during the most difficult passages of their tour. Yet throughout their journeyings they carried a plane-table and executed a survey of glaciers and passes never before visited by any man. It is the omission of these maps by the publishers, that is the only blemish on the book, though this is to a large extent compensated for by twenty-seven full-page photographs of exceptional beauty, which admirably illustrate the text, and which will prove a revelation to those who have not realized that the Garhwal ranges are the most beautiful of all the mountains in High Asia.

Shipton is very generous to his predecessors and gives them all unusually full credit for their pioneer work. In Part I he gives a straightforward account of the Himalayan system and a sound topographical description of Garhwal. Part II deals with the memorable first entry into the inner sanctuary of Nanda Devi, when the upper 3 miles of the Rishi Gorge cost eight days to unravel. Part III deals with the first crossing of Badrinath-Gangotri watershed. Part IV with the extremely difficult Badrinath-Kedarnath passage, where steep ice above and dense forest in precipitous gorges below presented occasion for a success such as will probably never be emulated. Part V narrates their second visit, after the Monsoon, to the inner basin of Nanda Devi: too brief an account of the first climb on the main peak itself; and a final desperate exit down the ice-cliffs of Maiktoli into the valley of the Golden Rock. The message of the book is simple, direct, unaffected, and will reach a happily widening circle, extending farther than the geographer and the mountaineer. T. G. L.

AFRICA

THE STONE AGE RACES OF KENYA. By L. S. B. Leakey. *London: Oxford University Press* 1935. 12½ × 10 *inches;* xii + 150 *pages; illustrations and map.* 38*s*

The work that Dr. Leakey has in recent years carried out in East Africa is too well known to need any special description here. In 1931 the Cambridge University Press published his book: 'The Stone Age Cultures of Kenya Colony.' The present book, published by the Oxford University Press, is in many

respects a companion volume, since it deals with the skeletal remains of the same region. The book begins with a short chapter on the climate and cultures of the Pleistocene period in Kenya. In it the author defines his terms Lower, Middle, and Upper Pleistocene. Chapter II is devoted to the discovery and the characteristics of the Kanam mandible, and Chapter III deals similarly with the Kanjera skulls. The author ascribes the Kanam jaw to the Lower Pleistocene (*i.e.* the Upper Pliocene of some writers), and considers it to be the most ancient fragment of Homo yet discovered. He also claims it as being very near the ancestral line of *Homo sapiens*. The Kanjera skulls, he thinks, belong to the early part of the Middle Pleistocene, and are associated with the Chellean culture. If this date were accepted, the fragments which Dr. Leakey describes would be among the most important ever discovered, since they would prove the existence of a form closely related to *Homo sapiens*, and even *Homo sapiens* himself, at much earlier dates than evidence has yet supported. Unfortunately the author's dating has not been generally accepted. On a subsequent visit it appears that there was some uncertainty regarding the location of the Kanam and Kanjera sites, and also regarding the stratigraphical horizons from which the remains were obtained (*vide Nature*, 9 March 1935, p. 371). Until the date of these remains has been definitely established, a task essentially one for geologists, we must suspend judgment on their full significance. In Chapters V–VIII, Dr. Leakey describes the skeletal remains which are associated with the Upper Paleolithic, Mesolithic, and Neolithic cultures of the region. This, in view of the uncertainty concerning the Kanam and Kanjera remains, is the most important part of the book. If the book contained nothing but these four chapters it would still be very valuable to any one interested in the prehistory of East Africa. Dr. Leakey's anthropometric work is beyond reproach. Associated with the Upper Kenya Aurignacian C. culture are the skeletons from the Gamble's Cave site. These represent five persons, who had been placed on their right sides with their knees drawn up to their chins and their backs to the wall of the rock-shelter, a few big rocks and stones and a little soil being placed on and around the bodies; the soil close to each skeleton contained red ochre. Only two of the skeletons, Nos. 4 and 5, were in a fair state of preservation. Both of these were young adult males, having cranial indices of 70·83 and 75·96 respectively. These skeletons appear to represent a type that we might call proto-Hamitic. In subsequent chapters the author describes the early Mesolithic people of the Elmenteitan culture, whose remains were found in the crevices of rocks associated with pots and stone implements; the late Mesolithic people, who were responsible for the Upper Kenya Wilton A. culture, and whose bones were found near shell-mounds about Victoria Nyanza, one skull having a cranial index of 68·3; and the Neolithic makers of the Gumban cultures.

In Chapter IX, Dr. Leakey reviews briefly some of the other prehistoric skeletal remains of Africa. He now accepts the Oldoway skeleton, which was at one time attributed to a much earlier period, as a burial of the Upper Kenyan Aurignacian period. He refers to South African finds, but makes no mention of those from French territory. The account of his visit to Broken Hill and his summary of the evidence relating to the age of *Homo rhodesiensis* are interesting and instructive. The book concludes with notes on the pathology of the Kanam mandible and of bones from Bromhead's site by J. W. P. Lawrence, on the endocranial cast of Kanjera man by Sir Grafton Elliot Smith, and on the odontological pathology of several specimens by Sir F. Colyer. It is lavishly illustrated with line drawings, and with many beautiful photographs. Its size however makes it difficult to handle. R. U. S.

LE OASI DEL FEZZÀN: ricerche ed osservazioni di geografia umana. By EMILIO SCARIN. *Bologna: Nicola Zanichelli, for R. Istituto Superiore di Scienze Sociali e Politiche "Cesare Alfieri"* 1934. 11×7½ *inches;* Volume primo 208 *pages;* Volume secondo, Appendici 52 *pages; illustrations and maps.* L.30, L.10

Dr. Scarin made two journeys from January to June 1932 in the Fezzan and, as a result, has published a monograph on the human geography of the Fezzan and the Tanezruft: it was an ambitious programme. The work is a compilation of facts, for the most part undigested, but presented in a readily accessible and lucid form. It should be of value for a more profound study of the subject, which needs considerably more historical and scientific background than appears in this publication. The declining population of the Fezzan, the rapid decay of local customs and of the languages and mode of life make such a compilation, and it is hoped others which will follow, not only valuable but urgent necessities. The political unrest and warfare, of the last fifty years especially, have reduced the population of the Fezzan apparently to some 24,000 people, living in an area in which Dr. Scarin's census gives not much less than 1,000,000 palm trees but only 5800 domestic animals including sheep and camels. The small number of people makes racial differentiation and measurement, in an area which has notoriously been inhabited by many races, almost a forlorn hope. The 2600 Tuareg and the other Berber peoples have almost lost their knowledge of their language. Within recent times there seems to have been migration to the west into French territory. Dr. Scarin attributes too much importance to the alternation of dominion by various races over the sedentary and servile population of the Fezzan. The periods of its greatest population and prosperity were under the dominions of the Bornu and Arab peoples, when the Tuareg were not only more numerous but also more aggressive. The decline of caravan traffic since European penetration of North Africa and European dissensions and mismanagement have been much more responsible for the decrepitude of the Fezzan than ever were the raids and slave-trading of the indigenous African races.

The sketch maps and photographs and the general set-up of the book show the improved standard of recent Italian colonial scientific publications. But there is no index, and a general map would have been of assistance. F. J. R.

SAHARA: The Great Desert. By E. F. GAUTIER, translated by DOROTHY FORD MAYHEW, with a foreword by DOUGLAS JOHNSON. *Columbia University Press* 1935. 9¼×6¼ *inches;* xvii+264 *pages;* 32 *Pl. and folding-map at end.* $3.75 (18*s* 6*d*)

This is a good translation of the French original, and Miss Mayhew has preserved successfully its expression and style. The Columbia University Press has used an interesting combination of sepia print and cream paper, in keeping with the subject, and the book is well bound and easy to use. The map, specially drawn, is good, clear, and useful. Most of the plates are good, the rest are disappointing or superfluous. The sketches at head and end of each chapter are delightful. Douglas Johnson's foreword is in his usual pleasant style, stresses Gautier's great achievements, but fails, in the reviewer's opinion, to inform the reader sufficiently of the actual function that the book performs.

Gautier's original French text is well known: it gives an indication of the elements of the subject without detail or exhaustive references: a good deal of the northern fringe of the French Sudan is included. When the author leaves the ground that has been his life's work one can but wish that he had sought the advice of some of his friends who were in more immediate touch with the facts, recent events, and literature. It is greatly to be hoped that serious students

will supplement this part of the book from other sources. The book may be highly recommended to those who wish to get a good general idea of the French Sahara, its ergs, water-supply, and modern problems. The essential differences between these territories and the deserts east of the Fezzan will be realized. It is a pity that the English text was not thoroughly revised before publication in a somewhat costly form.

Many will not agree with M. Gautier that the *serir* is the result of deltaic accumulations, nor (p. 47) that the barkhan is very rare in the Sahara, so far as the eastern part is concerned, nor that the "Abu Moharique" dunes are unique in the Libyan Desert. (p. 50) The author suggests that "a good share of this mobile sand" is lost in the Mediterranean, but at least in the east the prevailing drift is away from the sea, southwards. (p. 60) Some confirmation that the Carthaginian elephant was the last relic of the Zambezi fauna of the Atlas would be very welcome: the accuracy of the statement is not challenged, but more information might be given. (p. 61) "Geological Survey of Cairo" should be "of Egypt." (pp. 55 and 63) To the reviewer it is not clear what the author's views really are on the recurrence of desert periods from the Silurian onward, but again more explicit statements might help. (p. 74) The Nile is nowhere close to the "Arabian Range" and the author is twenty-five years out of date in describing the valley as a rift. Moreover the river did cut its own valley, and it is not a quaternary river as the author seems to think; much of pp. 74–76 invites criticism. For a book published in 1935—stated to be a revised edition—the following has a ring of the "good old days" (p. 103): "It (the Libyan Erg) is a region more unknown than the Antarctic, and unknown because it is impenetrable. Not only have European explorers been unable to enter its domain, but it is closed to the natives themselves . . . we have literally no knowledge of this Libyan Erg. . . ." Similarly p. 106 will make some geologists with experience of Egypt blink: "Egyptian geologists have recently discovered several enormous river deltas at Moghara, on the Wadi Natrun"; moreover the alluvial origin of the *serir* is not "obvious," at least in this sector, and there is no reason why "fluvial erosion . . . must have existed"; these remarks may apply to the Oligocene gravels, but we cannot say more than that.

On p. 132 Kufara is described as "an oasis that to-day, in the impenetrable fastnesses of the Libyan Desert, is the capital of Senusism and the last retreat of independent Islam." This was true, more or less, when the original book was published; it is corrected on pp. 168, 169. Moreover on p. 169 Hassanein Bey's great journey is curtly mentioned and other work ignored. In the whole of the pages devoted to the Libyan Desert, the oases, and water-supply, Dr. John Ball's work is never mentioned, and indeed the bibliographic references here should surely have been made more comprehensive and representative by the publisher of this American edition, even if the author was thinking, throughout the book, primarily of French science.

When we get into the Anglo-Egyptian Sudan we read (p. 224) that, under our rule, the country has gone through an amazing transformation, "principally economic": we remain a nation of shop-keepers. On the same page we learn that "a network of railways has been completed around Khartoum . . . connecting it with the neighbouring Red Sea at the old port of Suakin, which has been brought up to date and renamed Port Sudan"; and again: "oddly enough, in spite of the fact that the cataracts of the Nile interrupt river navigation between Khartoum and Egypt, the Sudanese railways have not been joined to the Egyptian system. This gap, which would be so easy to close, will probably remain open for some time, since England is not immediately anxious to complete the Cape-to-Cairo road and has less interest than formerly in nationalistic and inde-

pendent Cairo." These are astounding statements which are refuted by any schoolboy's atlas; among the errors we might note that the cataracts between Khartoum and Wadi Halfa are overcome by the Sudan railway between these two places, the gap which would not be "so easy" to close is in Egypt, not in the Sudan, and the Sudan Government runs a river service over this stretch to make contact with Egyptian rails some 150 miles north of the frontier.

Of minor errors we may mention (p. 225) "Kano situated almost on the very banks of the lake (Chad)"—it is about 400 km. from the said banks. K. S. S.

MISSION AU TIBESTI (1930–1931); dirigée par M. Dalloni. Tome II. (Ac. Sciences Inst. France–Mém.-T. 62–1935.) *Paris:* Gauthier-Villars 1935. 11×9 *inches;* 458 *pages; illustrations*

This is the second and final volume of the 'Mission au Tibesti': the first was reviewed in this *Journal*, vol. 87, pp. 80 *sqq*.

The volume includes Botany by R. Maire; Zoology, both vertebrates and invertebrates, by several authors, some of them well known in this country; Palethnology and Ethnology by M. Dalloni. The last two sections are exhaustive and occupy over 350 pages. The first two sections account for about 40 pages apiece, and the botany is almost entirely systematic. An interesting list of species shows that about 26 per cent. are Sudanese, or sub-types; 28 per cent. Saharan, or sub-types; 6 per cent. Mediterranean; 7 per cent. tropical; 8 per cent. endemic, and so on. Altitude, habitat, distribution, local name, and other useful information is included in a valuable contribution, which will enable comparison to be made with the flora of Anglo-Egyptian and French Sudan.

Of the vertebrates as a whole some shown in rock-pictures have disappeared, including ostrich, giraffe, elephant: the surviving species are what one would expect. A new species of *Gerbillus* (*G. Dallonii*) is described. The freshwater molluscs, described by Louis Germain, are essentially equatorial African; there are some notable absentees from the present collections, and the palaearctic species are not represented, an interesting point since terrestrial palaearctic species are known in the Hoggar. More collecting is needed. There are some important records of insects, which should be valuable to African specialists.

The section given to Palethnology is a great addition to the subject: most of the palaeolithic cultures have been found and their locations mapped: numerous drawings of the implements themselves are included, and comparisons are made with the industries of other areas. Prehistorians will find a mine of information in these pages and in the systematic description and illustration of rich material. As usual, one is impressed by the enormously wide distribution of types in Africa and Europe.

Industries of polished stone implements were found, naturally referred to the neolithic; but it must be remembered that such tools probably remained in use long after neolithic times. Some of them are similar to forms known in northern Darfur and on the western frontier of the Anglo-Egyptian Sudan, and it will now be possible to plot their distribution. A small collection of sherds is illustrated and should prove useful for comparison. Ancient habitations are described. Four skeletons are anatomically described by M. Leblanc. There is a long description of some extraordinary rock-pictures which is full of interest and suggestion: the notes on the pictures of the animals are also valuable. It is in fact impossible in a review to do more than indicate the immense reservoir of information in this section.

The final part of the volume is devoted to the origin, history, anthropology, manners and customs of the Tibbu (Toubou). Here again specialists in many fields will find that for which they have waited a long time. This volume is a

worthy successor to Vol. I, and no African library will be complete without them. It would be invidious to criticize minor points in such magnificent additions to so many sciences. K. S. S.

L'AFRIQUE NOIRE OCCIDENTALE. By E. F. GAUTIER. (Publications du Comité d'Études Historiques et Scientifiques de l'Afrique Occidentale Française. Sér. A. N° 4.) *Paris: Larose* 1935. 10×6½ *inches;* viii+188 *pages; illustrations and maps*

A book from the pen of M. Gautier is always welcome to students of North-Western Africa. In his latest volume, which is based on papers published in various geographical reviews, he has abandoned his old field, the Sahara, for the French and British colonies lying to the south. The book begins with a review of the physical geography of the region from which it passes to a closer study of the characteristics and inhabitants of the separate regions into which it naturally falls, including brief sketches of the more important peoples such as the Mossi and the Fulani. Like all M. Gautier's writings, it is full of original thought which holds the reader's interest throughout. The inexcusable omission of an index however robs the book of the whole of its reference value, compared with which the inadequacy of its maps is of small, though regrettable, consequence.

Although now breaking fresh ground, M. Gautier has lost none of his old enthusiasm for the past history of the Sahara, on which, as he found, the countries to the south throw considerable light. The value of Mr. J. D. Falconer's work in northern Nigeria has evidently greatly impressed him, and he obviously delights in shocking the "desiccationists" by emphasizing his conviction that in quaternary times the Sahara extended so far south that desert conditions then prevailed where to-day we find forests and an abundant rainfall. In the face of much convincing evidence this view is gaining general acceptance, but M. Gautier wisely emphasizes the danger of generalizing. For example he points out that although the climate of Hoggar is more arid to-day than it was in quaternary times, the not-far-distant Adrar of the Iforas is to-day enjoying a humid period. Along the southern frontiers of the Western Sahara there is abundant evidence of progressive desiccation, but in the north, M. Gautier rightly points out, in spite of historical, archaeological, and meteorological records going back to a remote antiquity, there is no evidence of deterioration in climate. Of more general interest are the historical sketches of the ancient traffic in gold, of the Mossi and the way in which they have preserved their identity without any natural frontiers to protect them, and of the Fulani, the shepherd kings of Western Africa, which are put together with admirable accuracy.

M. Gautier (p. 161) wonders why the Rio de Oro was so named. The generally accepted theory is that when the Portuguese discovered it they took the inlet, from which the surrounding country subsequently got its name, to be the mouth of the River of Gold from which the gold of the Sudan was believed to come, and named it accordingly. Barros, on the other hand, says that it was so named because the Portuguese exploring this coast here first obtained gold dust.

E. W. B.

THE SOCIAL SYSTEM OF THE ZULUS. By EILEEN JENSEN KRIJE. *London: Longmans, Green & Co. (for University of the Witwatersrand, Johannesburg)* 1936. 9×5½ *inches;* xx+420 *pages; illustrations and maps.* 25*s*

Mrs. Krije's object in writing this book has been to present a comprehensive account of Zulus and their every aspect. In this she succeeds admirably. She

has collected the data from the writings of travellers, missionaries, and traders; and verbally from present-day informants. Further elucidation of certain ceremonies, manners, and customs has been obtained by submitting questionnaires to others who are in a position to supply accurate answers. She shows how the life of the community is inextricably bound up with the life and prosperity of the Chief, and with the abundance of the cattle. For those who already know something of the Zulus this book provides a splendid opportunity of knowing more. For the general reader however the profusion of detail is bewildering and the multiplicity of footnote references tedious; while for one not conversant with the Zulu language the following sentence is somewhat disconcerting: "Under the term *ngena* or *ukungena* are included the *ukuvusa* and the *ukuzulela*, which, strictly speaking, are not synonymous with the *ukungena* in its more definite signification." Often also Zulu words are used where the English equivalents would more readily convey the meaning.

The work is of great value from the scientific viewpoint, and will be found useful by the administrator and the anthropologist. It is packed with information, and one cannot but be impressed by the industry which, as Mrs. Krije tells us in her preface, has checked and counterchecked every statement.

D. K. K.

NORTH AMERICA

THE SPANISH MISSIONS OF GEORGIA. By JOHN TATE LANNING. *Chapel Hill: The University of North Carolina Press* (*London: Oxford University Press*) (1935). $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* xiv+322 *pages; illustrations and sketch-map* (by WILLIS PHYSIOC). *13s 6d*

The recent history of the United States has wrought such remarkable changes, not the least in its geographical patterns, that it has naturally attracted greater attention than the relatively remote Spanish phase. Yet a very distinct interest attaches to this almost ancient period of American history, since the Spaniards were the first Europeans to make settlements in, and to write accounts of, the southern United States. Certainly their activities in Georgia form one of the least familiar chapters in the history of Spanish America, and for this, if for no other reason, Professor Lanning's book is welcome. It is true that the story which he recounts has an essentially historical interest. Little survives on the ground to mark the former presence of the Spaniards in Georgia, and in a brief review of the archaeological evidence the author indicates the difficulties of authenticating the few traces of buildings and settlements which have been attributed to the Spanish period. Even so, geographers will be interested to learn from the written sources anything which relates to Spanish Georgia in its pre-cotton days, as also to note the geographical ideas about the region expressed in the earliest Christian writings. "Georgia as an English frontier colony has often been dilated upon," writes Professor Lanning, "but Georgia as a Spanish frontier colony against Carolina has rested quietly in oblivion." It is with this pre-English period of Georgian history, when European culture made its first impact there, that the author is concerned. By dint of much research in the archives of Spain, the United States, and England he has clearly filled a gap in early American history, and has produced too a readable and well-grounded book.

The book deals primarily with the efforts of Spain, through the agency first of the Jesuits and then of the Franciscans, to Christianize and civilize the native Indian peoples. It touches too on the political aspect of this work—the maintenance of this northern outpost of Spanish America against the dangers of attack by Indians, English, and French. It may be said in passing that the

narrative, with all its light and shade, gives a very creditable picture of the civilizing work of Spain.

Professor Lanning has not attempted, within the limits set by his material, to reconstruct the geography of Georgia during the period, mainly the seventeenth century, with which he is concerned, but from his pages a partial picture can be drawn. Spanish settlements and Mission stations were established along the coastlands and off-shore islands, from the *presidio* of St. Augustine in the south to that of Santa Elena in the north. These insular and coastal sites had the advantage of nearness to the Spanish sea route between Spain and the Caribbean, and also that of waterway communication, largely by inner, sheltered waters. The chief Spanish settlement, St. Augustine, which already boasted 120 houses in 1600, commanded the northern approach to the Bahama Channel, along which passed the treasure fleets from Havana. In fact, this positional advantage outweighed the objections of those who urged the abandonment of this site on the grounds that storms and floods were frequent and that the adjacent marshes, lagoons, and sandy stretches made the land unsuitable for agriculture (*cf.* pp. 108 and 119).

The mainland and interior of Georgia, then thickly covered with woods, was occupied by Indian tribes, notably by the Gualeans and Timucuans, who were distinguished in language. The territory of the Gualeans lay between St. Andrew Sound and the Savannah river; that of the Timucuans, to the south, stretched between St. Andrew Sound and St. Augustine. The economy of the Indians was clearly primitive, and although they had a few tribal centres and some villages, their way of life was largely migratory. In the Spanish accounts they are described as poor, indecently or scantily clad, indolent, and little given to sedentary life and agriculture, which is not surprising owing to the dominance of the forests. They lived largely on game and fish: those dwelling near the coast enjoyed oysters, but, having little use for pearls, they discovered them often after the oyster had been cooked! It is worth noting the difficulties encountered in growing maize: the Indians actually dug the ground with their hands, and harvested only small yields after four months or more of growth, by which time birds, insects, and rodents had taken their toll. In fact "the Spaniards did not consider the (coast) land capable of sustaining European life without large importations of flour and other goods from abroad" (p. 19). Spanish soldiers and friars were afraid to introduce cattle lest they should eat up the meagre corn supplies of the Indians, and lest they should be stolen. Although horses had been introduced, the Indians, not too willingly it is true, usually carried goods to the Mission stations. Away from the sandy coast-lands the pervading forests, within which the Indians were continually moving, yielded skins of deer, beaver, and otter, which were sought in trade by Englishmen from South Carolina.

Finally, in contrast to the poverty of the coastal region stood the fabled wealth of Tama in the interior: witness the information very carefully collected by Spanish officials in 1602 (p. 123). The "crystal mountain of Tama," rich in diamonds and emeralds, was only a dream, but in other respects their information is significant; in Tama "the Indians extracted gold and wore gold chains around their necks"; moreover the region was generally believed to be fertile and to produce an abundance of grain, being "far better suited to the production of wheat than the region of St. Augustine." Of interest too is Governor Salazar's proposal towards the end of the seventeenth century to introduce into Florida from the Canary Islands settlers with a knowledge of cotton growing and working (p. 175).

Enough has been given to suggest the interest of this book to geographers as

well as to historians. It is a pity that the map, which certainly has in its artistry a period flavour, is so little helpful to the reader. The time has come, or at least it should have come, when historical maps should be geographers' maps.

W. G. E.

SOUTH STREET: A Maritime History of New York. By RICHARD C. MCKAY. *New York [and London]: G. P. Putnam's Sons* 1934. 9½×6 *inches;* xxii+460 *pages; illustrations.* $5.00 (£1 1*s*)

South Street, New York, bears the same relation to shipping that Wall Street does to finance. The object of this book is, in the words of the author, "to trace the course of American commerce from its first dawning to its achievement of brightness and splendor upon New York's leading commercial thoroughfare, or Street of Ships, South Street." The work is primarily a history of the merchants and shipbuilders of New York during the period 1783–1861, with a brief summary for the years 1861–1914; it describes the fortunes of the leading families concerned in the growth of the city's maritime trade. The book is attractively written and contains a large amount of material that will interest the student of American economic geography, although this matter is mixed up with the lives of families of merchants. Such topics as the beginnings of American trade with China, the growth of New York's foreign and coastal trade, the gradual reduction in the time taken by the trans-Atlantic passage, the increase in immigration, the effects of the gold rush to California, the slave trade, and the immediate benefits that were given to maritime trade by Maury's researches on winds and currents, all find their place in this book, and many of them are illustrated by useful tables of statistics. The author gives a list of his principal sources in the preface, but the absence of footnotes makes it difficult to follow up many of his references. The book contains, as appendices, a list of the merchants and commercial houses of South Street in the year 1852, a list of the piers in New York in 1817, and of the city wharves on the East River in 1853. The illustrations consist of a large number of reproductions of interesting old prints, but it is unfortunate that no maps have been included. E. W. G.

CENTRAL AND SOUTH AMERICA

GOYAZ: das wahre Herz Brasiliens. By HERMANN KRUSE. *São Paulo: [printed for author by] Assumpção and Teixeira* 1936. 7½×5½ *inches;* 138 *pages; illustrations and maps*

This is an informal description of the little-known province of Goyaz in Brazil. The author has lived and worked there many years and has got to know all classes of the community, the large majority of which are half-castes. He is particularly interesting on the effects of the Syrian immigration in the last few decades, pointing out how hopelessly a prey to these sometimes unscrupulous merchants the simple and lazy country folk must be. The book is divided into two parts, the first giving an account of the history, ethnology, and physical geography of the country, the second consisting of sketches of everyday life amongst the people. The illustrations are not good. M. C.

AUSTRALASIA AND PACIFIC

OCEAN ISLAND AND NAURU. By ALBERT F. ELLIS. *Sydney, Australia: Angus and Robertson (London: The Australian Book Co.)* 1935. 8×5 *inches;* xvi+318 *pages; illustrations and maps.* 7*s* 6*d*

A halo of romance surrounds every coral island, and though stern realities have sadly dissipated that halo in general, yet this book shows how even the successful

commercial exploitation of phosphates may leave the romance but little injured and even add some romance of its own. The discovery of the wealth of phosphate on Ocean Island and Nauru was made in the most surprising way. Prospectors for phosphate had actually landed on the islands and failed to recognize their value, but they brought away a block of phosphate under the impression that it was fossil wood, and this was used as a door-stop in a Sydney office for several years before any one recognized what it was or thought of analyzing it. The men in charge of the exploitation, including the author of this book, were fortunately very sympathetic in their dealings with the natives. Having been resident on Ocean Island for eleven years, and afterwards visiting it from time to time on tours of inspection, Mr. Ellis has given us a most interesting book, richly illustrated with photographs and full of illuminating detail of island life, both that of the original native inhabitants and that of the modern extractive industry with its remarkable developments in ship-loading methods.

The one weak point in the work is the treatment of the geological aspect of the phosphate. There is a bibliography at the end which, for such a limited subject, ought to be complete; but it does not include the paper by L. Owen on Ocean Island in the *Quarterly Journal of the Geological Society*, vol. lxxix (1923), nor the same author's reply to the criticisms of Mr. Danvers Power in *Economic Geology*, vol. xxii (1927). Mr. Ellis dismisses Owen's theory of phosphatization by guano, though obviously misunderstanding it, and puts himself out of court as a critic by this extraordinary remark: "Whatever the various theories may be, there is probably at least one feature common to all, namely, that the phosphorus held in suspension in sea-water, so frequently seen in the form of phosphorescence, is the first origin of the deposit." The idea that since yellow phosphorus, isolated by elaborate chemical processes, is luminous in the dark as it slowly oxidizes, therefore all similar luminosity (or phosphorescence) indicates the presence of the element phosphorus (uncombined?) is a superstition widely held by those whose knowledge of chemistry and physics is purely verbal—witness the popular belief that fish is "brain-food" because it is luminous when decomposing. We should not have thought it could survive a lifetime's devotion to the phosphate industry. It is regrettable that the fossils in the phosphate, though numerous, are badly preserved. The only specific record is of the extinct shark *Carcharodon megalodon*, which dates the original deposit as Miocene (early Pliocene at latest)—a date which leaves ample time for subsequent terracing and phosphatization. A. M. D.

WANDERINGS AMONG SOUTH SEA SAVAGES, AND IN BORNEO and the Philippines. By H. WILFRID WALKER. *London: H. F. and G. Witherby* 1935. (Re-issued. First published 1909.) $8 \times 5^{1}_{2}$ *inches;* xvi+254 *pages; illustrations.* 7*s* 6*d*

This book is a reprint of the original 1909 edition, and the publishers tell us that "conditions have not greatly changed since the author experienced these adventures," thirty years ago. In fact his accounts of Fiji and the Philippines often read as if written more recently. But the conditions he describes in Sarawak and North Borneo are very different now. He did a trip up the Rejang River to Kapit Fort with the Government officer, Charles Hose, explorer and naturalist, the greatest figure of the enlightened Sarawak administration at that time. Walker took part in punitive parties and extensive arrest of Dyaks for head-hunting, which was making the river unsafe for Chinese. But nowadays things are very different in Sarawak. The place is safe for the Chinamen, who trade up the farthest creeks and streams. Though the Dyaks still expand, and are still hated by the other tribes, they are under complete control.

In New Guinea Walker went with Monckton on his unsatisfactory and bloody punitive expedition against the Doboduras, until then unvisited; now quite under control. On this trip also they discovered the remarkable swamp-dwelling Agaiambu folk. This is a good book as South Sea books go. It is written honestly. T. H. H.

PAPUAN EPIC. By KEITH BUSHELL. *London: Seeley, Service & Co.* [1936] 9×5½ *inches;* 318 *pages; illustrations and sketch-map.* 12*s* 6*d*

This is probably a very good book for the man in the street, but the geographer and the scientist will not find it quite so satisfactory. We should like for example more evidence about the race of tailed men who appear to live so near the coast. The book is mainly an account of a punitive expedition led by the author. The author tells us that he has employed the third person in writing so as to avoid self-praise. The photographs, derived from various sources, are good.

T. H. H.

PHYSICAL AND BIOLOGICAL GEOGRAPHY

GEOMORPHOLOGIE DER FEUCHTEN TROPEN. By KARL SAPPER. (Geographische Schriften. Edited by ALFRED HETTNER. Heft 7.) *Leipzig: B. G. Teubner* 1935. 8½×5½ *inches;* vi+154 *pages; illustrations. M.*4.50

This book fills a serious gap which has hitherto existed in the literature of geomorphology. Much has been written about the characteristic land-forms of polar, temperate, and desert regions, but those parts of the tropics in which rainfall is continuous or lasts throughout a great part of the year have been comparatively neglected. Incidental observations have been made by many geologists, but there are few papers dealing specifically with the geomorphology and those few are not readily accessible. It has been left to Dr. Sapper to provide a connected account based on his own observations and those of others. Dr. Sapper is well known for his researches upon the volcanoes of Mexico and Central America, where he lived for twelve years. The science of geomorphology was then in its infancy, but he was already interested in the subject. He has since had opportunities of investigation in tropical Australasia and the South Pacific, and also in the West Indies and South America.

Since much of the tropical region is very imperfectly known the author selects areas which have been examined from the geomorphological point of view. He treats these in some detail and adds interesting comparisons between them. Where he relies upon the observations of others he quotes extensively from the original work. Rather more than two-fifths of the book is devoted to the region of constant rain, rather less than two-fifths to the region of seasonal rains. The tropical "cold land" is briefly dealt with and there are short general chapters on the geomorphological influence of plants and animals, and of man, on the work of the sea, and the influence of restricted area. The latter is a point upon which the author lays some stress. The results of geological agencies acting upon a wide tract of land are not identical with those of the same agencies acting upon a small island.

There are eight line drawings in the text and four plates of photographs. Some readers may wish for more, but the serious student will scarcely notice their fewness; he will be too pleased to find at last an adequate account of erosion and deposition in the wetter regions of the tropics. P. L.

ECONOMIC AND HISTORICAL GEOGRAPHY

LIÇÕES DE GEOGRAFIA HUMANA. By ARISTIDES DE AMORIM GIRÃO. *Coimbra Editora* 1936. $10\frac{1}{2} \times 7\frac{1}{2}$ *inches; 226 pages; illustrations and maps*

The output in English of geographical publications of both academic and popular type is so great that we often overlook how comparatively young is this interest in human geography. Very little work was done on this subject before the first decade of this century. Therefore we must not be surprised that only since 1930 has human geography been a recognized course at Coimbra, the classic university of Portugal. The professor of that course has just published the first study of human geography that has ever appeared in Portuguese. Although his "critique" is long and authoritative, conditions of publication in Portugal made it necessary for the University to sponsor it in a limited edition.

Amorim Girão aptly entitles his work *lições* on the topic, since it consists of a fuller statement of his lecture notes. As a critique it merits careful reading, because the author draws together and reviews the whole range of theories regarding human geography as stated in international publications of recent years. His familiarity with European geographers in all languages is great credit to his erudition. This aim of the book accounts for what might be considered a disproportion, because consideration of defining human geography occupies nearly the first half of the work. Amorim Girão avoids adding a definition of his own and leaves us with the feeling that so much thought spent on defining something which is never quite rational might have been better used in other directions. Geography is a complex of interrelated facts: the various "branches" of the subject look at this complex from different points of view, and never completely exclude any one fact although the prominence given to that fact may alter considerably according to the perspective from the chosen standpoint. Thus, "Human" and "Physical" geography may handle precisely the same materials: the difference lies in the varying emphasis. Sometimes geographers' quibbles about definition resemble the mediaeval scholastic discussion about the number of angels that might stand on a pin. In these *lições* French geographers take a prominent place, and while the German school receives due credit, Ratzel is rightly declared more a Polonius than a Socrates. In his chapters of exposition the author must accept our thanks for illustrating his points with unusual examples from Portugal and its colonies, and for excellent extracts from travellers describing conditions and their effects upon men. These extracts are far more illuminating than the photographs, which are small and not up to the standard of the rest of the book. E. H. G. D.

PRECURSORI DI COLOMBO? Il tentativo di viaggio transoceanico dei genovesi fratelli Vivaldi nel 1291. By ALBERTO MAGNAGHI. (Memorie della Reale Società Geografica Italiana. Vol. XVIII.) *Roma: Arti Grafiche* 1935. 10×7 *inches; 156 pages; facsimile maps.* L.20

This study deals with the evidence for an overseas voyage by the Genoese brothers Vivaldi in 1291. A certain amount of evidence for it exists in a contemporary chronicle, to the effect that they set out "ut per mare Oceanum irent ad partes Indiae"; a later chronicler states that "cursum in occidentem direxerunt." Nothing was heard of the voyagers after their departure, and the record would probably have attracted little attention but for the fact that the tradition of their enterprise gripped the imagination of succeeding generations, and was considerably embellished. Thus the anonymous "Libro del conoscimento" of the mid-fourteenth century contains passages which relate that

the Genoese had been wrecked at a place called "Amenuam," that they had been taken as captives to "Magdasor" and finally to "Graçiona," and that a son of one of the Vivaldi had visited those parts to seek news of his father. Over a century later, in the letter ascribed to Antoniotto Usodimare, an extraordinary story is related of his encounter on the coast of Guinea with a descendant of a survivor of this expedition, then in the service of "Prester John." Magdasor having been identified with Mogadishu, and Graçiona with Aksum, the opportunity of making a case for circumnavigation of Africa at the close of the thirteenth century at once presented itself, and this opportunity has been readily accepted by Italian and other historians of exploration.

Professor Magnaghi examines at considerable length all the evidence adduced in its support, into which it is impossible to go here. It is sufficient to note that he demonstrates forcibly the contradictions and general unreliability of the Usodimare story, and gives a reasonable explanation of the passages in the "Libro." He argues that the latter, for its African portion, is based upon a map of the Estense type, which shows a deep easterly gulf bringing the Guinea coast into proximity to Ethiopia. The vague interpretation given in the Middle Ages to the term "Indies" also serves to explain the growth of the story.

For his own part the author believes that "Magdasor" should be identified with Mogador rather than with Mogadishu, and that therefore the expedition came to an end upon the North African coast. Returning to the original authorities, he argues that the object of the expedition was to reach India by sailing westwards, *i.e.* the aim of Columbus two centuries later. Here he can do little but take his stand upon his authorities, and contend for the practicability of such a voyage at that epoch. He has however done good service in destroying the top-heavy structure built up by enthusiasts for a mediaeval Italian circumnavigation of Africa. G. R. C.

GENERAL

SIXTY YEARS IN THE EAST. By Sir William Willcocks. *Edinburgh and London: William Blackwood & Sons* 1935. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* 338 *pages; portrait.* 15*s*

This book is primarily a very interesting human document, its importance as a historical record of work done being quite secondary. Indeed it is by no means easy to disentangle the latter from the mass of anecdote and opinion in which it is embedded. The style is not polished, but it has the merit of seldom wasting a word and suiting the subject-matter of the book, which consists largely of a series of anecdotes, often trivial, but full of intensely human interest.

Sympathy with the backward and downtrodden is perhaps the quality most marked in Sir William's character. But this quality did not blind his common sense, as is well shown by his drastic treatment of typical oriental failings when they appeared; and by an appreciative, though freely critical, estimate of the great work done for Eastern peoples by his compatriots. These traits of character generated a trust on the part of his subordinates which stood him in good stead throughout his career.

He must have been an athlete in the widest sense of the word, with an iron constitution, and these qualities he used to the full in his work. When we add to them a mystical gift, coupled with a strong sense of the practical, we can understand the varied nature of his career. Those acquainted with the continual conflict in the East between the man on the spot and officialdom will be amused at the subterfuges employed when regulations offended his sense of justice. For instance when he authorized grossly underpaid engineers to engage cooks for themselves in the guise of engineering subordinates.

As might be expected, he often failed to see eye to eye with Lord Cromer, and, while acknowledging the great work done by him, is not sparing in criticism.

The difficulty of missionary enterprise among heathen tribes is well illustrated by a Moslem criticism of the slowness of Christian methods. Transfer of the women to the harem, thus quickly to breed large numbers of little Moslems, was considered far superior practice!

The value of the book would have been increased had a few large-scale maps been included, also some notes explaining the meaning of technical terms. In spite of these minor defects however the book is one which should be attractive to any one interested in human nature rather than mere data. It can very easily be taken up and read at any place at any time, but not nearly so easily put down again.

R. L. R.

EVEREST: the Challenge. By Sir FRANCIS YOUNGHUSBAND. *London: Thomas Nelson & Sons* 1936. 9×5½ *inches;* x+244 *pages; illustrations and sketch-maps.* 12*s* 6*d*

The main purpose of this book, as we learn from the preface, is to attract the attention of mankind to the Himalaya; and this, not merely for climbing Mount Everest or any other of the ten peaks above 27,000 feet in height, but also through interchange of thought to develop the "deep affinity between the European mountain-lover and the Indian pilgrim to the Himalaya." Despite his avowed dislike of all Himalayan photographs, the author has complied with the publishers' wish to include some; he is to be congratulated on his judicious selection, and their reproduction is above the usual British standard; but there are some errors in the titles.

The book is divided into two portions, "Adventure" and "Reflection." In the first portion Sir Francis traces the history of successive attempts on Mount Everest, together with shorter reference to other recent Himalayan expeditions. It is a difficult matter to summarize in readable form what has been set out first-hand in many volumes, but we have here a clear, succinct, stimulating account of the progress of exploration, each party profiting from the experience and the inspiration of their precursors. Perhaps the author might have dealt more fully with the reconnaissance of 1921, which occupies one paragraph only; and, especially in describing the German expeditions, there are several names wrongly given. On p. 94 it is stated that the two Europeans who led the descent from Nanga Parbat on 9 July 1934 reached Camp VI that evening—an important misprint for Camp IV. Apart from these details, it is easy to follow the successive steps which lead the author to conclude, "It is not only the bodies of individual climbers that have become acclimatized to the supreme altitudes: their minds also are becoming acclimatized." With this development of mind has come a new spirit of adventure in the Himalayan people, fostered by their comradeship with European climbers. Yet he does not minimize the difficulties which attend the conquest of the final pyramid of Mount Everest: the choice of site for the highest camp, the need for preserving the strength of two climbers and perhaps two porters, the problem of determining the exact moment between wintry and monsoon conditions which alone can give reasonable prospect of success. And if the mountain has proved more difficult than was originally supposed, "Everest has done something more than merely hurl back her assailants. She has called forth the unsuspected best within them."

The second portion of the book, "Reflection," shows us many of the author's own experiences and brings us into closer touch with Himalayan peoples. In his descriptions of forest life, of nights beneath the stars, of pilgrimages to the holy places of the Himalaya, Sir Francis wins our sympathy for his ideal—that

within reach of every man, be he of Everest calibre or of less superb physique, Mountain Sanctuaries be established and consecrated for ever to the worship of beauty, where European and Indian pilgrims may "meet on spiritual grounds." It is no mere catalogue of famous viewpoints or hill-stations which is given in the chapter entitled "Holy Himalaya"; the author clothes each place named with its own distinctive atmosphere, whether it be the confluence of glaciers beneath the cirque of K_2 and its attendant giants or the autumn foliage upon the planes and poplars of Kashmir. The final chapter, "Starry Nights," is perhaps the most delightful of the whole book, and here the author sets out his faith in the ultimate good of all mountain travel, where in company with the stars a man may see things in their due proportion. No doubt he would agree with Dr. Kugy's principle that to know your mountain properly you must sleep out on it.

"Even on the top of Mont Blanc," writes Leslie Stephen, "one may be a very long way from heaven. And yet the mere physical elevation of a league above the sea-level seems to raise one by moments into a sphere above the petty interests of every-day life." This is in fact the "Challenge" which Everest sets to the modern generation: a challenge to the spirit of adventure in man, and a call to search out those regions where a man, trained in body and mind, may "take possession of his soul" and find the common bond of a single aspiration, "a spiritual fellowship of the Himalaya, of which Everest might well be the symbol." Though Sir Francis disowns any claim to be a mountaineer, he has the fullest understanding of all who seek the high places of the world, and in reading his book we find ourselves, in Mummery's fine phrase, afoot with the quiet gods.

H. E. G. T.

HORIZON'S RIM. By ALEXANDER CROSBY BROWN. *London: Arrowsmith* 1935. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* x+374 *pages; illustrations and sketch-map.* 15*s*

A merit of this well-produced book is that the narrative starts in Sydney. The Nova Scotia schooner *Chance* had been worked so far on her voyage of circumnavigation by a crew of American University students. E. H. Dodd's 'Great Dipper to Southern Cross' (*Geogr. J.*, vol. 79, p. 339) described the passage to Sydney; the present book continues the tale and ends with the vessel's arrival in New Bedford. Seventy-six feet over all and 64 feet on the water-line is by no means a very small craft. For a ship of this size Trade Wind weather is pleasant and sail can be carried even when it is blowing very hard. The author and his crew seem to have sailed for the sake of the sailing, and not for any romantic illusions. So the book is in part a compendium of how to sail one of these schooners. The practice is not quite as English readers might have expected. Probably most of us would start shortening sail by lowering the fore-staysail. But here it is the jib which comes in first; and the jib runs on a wire stay so there is no mention of the trying business of changing jibs.

Most people read these books for the description of the places visited. To the author however there is no vast difference in geographical interest between Singapore and Socotra. He sees both for the first time. So a number of interesting accounts of places rarely visited alternate with sketches of towns known to every liner passenger. But the whole book is freshened by a typically American use of irony.

The reviewer feels it is a pity the *Chance* did not continue inside the Barrier Reef all the way up the Queensland coast. Some legend is spread about the quays in Brisbane, perhaps by the Torres Straits' pilots, that the steamer channel is very difficult ("doubles back on itself") and badly charted. Masters who know the Inner Route will tell you that, at any rate for small craft with an auxiliary,

especially when northbound, the passage is practicable. But the *Chance*'s company took the story at its face value, and left the sheltered water just after visiting the aboriginal penal settlement on Palm Island. The narrative recalls that remarkable man who ran the settlement according to his own ideas in the face of all kinds of opposition and discouragement. It was a tragedy for the cause of native administration that he became mentally unbalanced in 1930.

Some pleasing wood-blocks by an anonymous artist illustrate the pages. These do much to support the attempt the author makes on several occasions to describe the routine life of a passage. The time at sea is longer than that spent ashore and the memory of it goes deeper. But it is most difficult to make a convincing account of the daily repeated business of having to go on deck to take the watch, doing the trick at the wheel, shifting sail, calling the next watch, and so on. Probably the best part of the book describes the most awful experience when, a few days' sail from the American coast and the end of the voyage, they were struck by a hurricane. The ship was deprived of sails and sea-anchor and, leaking badly, was in charge of the storm. Few vessels could have survived such weather; the account of it is very moving. M. A. S.

THIS BUSINESS OF EXPLORING. By Roy Chapman Andrews. *New York—London: G. P. Putnam's Sons* 1935. 9½×6 *inches;* xx+288 *pages; illustrations and map.* 15*s*

This book contains a varied assortment of narratives and anecdotes from the author's rich harvest of experiences, chiefly in eastern Asia. Its lack of unity is partly the result of the dual purpose revealed in the Preface. On the one hand Dr. Andrews is writing "an informal account of his conception of modern exploration" and answering the questions which, he says, come to him by the thousand: "How can I be an explorer?" and "What remains to be done in exploration?" On the other hand he is describing the work of the 1928–30 Central Asiatic Expeditions in the Gobi Desert. Although the two objectives are linked by envisaging these expeditions as an example of modern scientific exploration, each seems to deserve separate and fuller treatment.

The would-be explorer can in any case learn much of value by studying this candid record of the author's precepts and practice. His choice of the many collaborators in his task seems to have been very fortunate, and he accords their contributions generous praise. A chapter is devoted to the gallant life and premature death of Mr. J. McKenzie Young, a loyal companion in hardship and adventure. The author is engagingly frank about his own likes and dislikes, abilities, and limitations, a welcome characteristic in an expedition leader. Thus in spite of his intense interest in the discovery and excavation of palaeontological remains, Dr. Andrews confesses: "Usually I am banished from the immediate vicinity of an important specimen. I can find fossils right enough, but my impetuous nature is not suited to the delicate operation of removing them. . . . In the language of the Expedition, when a fossil is broken beyond repair it has been given the 'R.C.A.' " (p. 215).

The scientific achievements of the Central Asiatic Expeditions are summarized in Appendix B. The geological and palaeontological data collected are particularly impressive, and the more serious type of reader must guard against an impulse to underestimate their importance simply because the author is constantly emphasizing it. In this connection it is relevant to recall that over a hundred thousand pounds had been spent on the expeditions before midsummer 1930 (p. 265), a sum largely subscribed by the American public as a direct result of Dr. Andrews' travel books and lectures. Some may wonder whether the work could not have been accomplished within a more modest budget; the

decision to adopt motor transport instead of relying entirely on the traditional camel certainly involved great additional expense. There is however a convincing defence of this method of desert travel in the author's account of the preceding expeditions, 'On the Trail of Ancient Man' (pp. 7–11), and it is obvious that the saving of time and discomfort was important in the case of the senior scientists who went into the field.

An index should not be omitted even from a popular work of this nature, and a glossary of geological and zoological terms would save repetition and make certain passages clearer to the uninitiated. Some of the photographs are excellent, but new plates might with advantage have been substituted for the four which have already appeared in 'On the Trail of Ancient Man.' The interest of the expedition narrative would be enhanced by a map sufficiently large in scale to show the main camps. In the general map which is given, some important place-names, such as Erhlien and Changpei-hsien, are missing, while several are obscured owing to the fact that the map is printed on the endpapers, a practice which has many drawbacks. For the "Lan Shan" range on the map read "Ala Shan," corresponding to the "Alashan Desert" mentioned in the text (p. 198). E. J. L.

FLYING ADVENTURES. By WALTER MITTELHOLZER. *London: Blackie & Son* 1936. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* xiv+202 pages*; illustrations and route-map.* 10*s* 6*d*

In this book Walter Mittelholzer gives an interesting and instructive description of his flights to the Arctic, Persia, Central Africa, Mount Kenya, and Kilimanjaro, Lake Chad, Abyssinia, etc. They are all of a pioneering nature and were undertaken in the true spirit of adventure. There is a wealth of aerial photography in the illustrations taken by the author, who is a lover of the mountains, and his photographs of the high peaks of Switzerland, Persia, and Central Africa are of particular interest and beauty. The exactitude with which he gives the height of the aircraft above sea-level to within a foot, the times of "take off" and landing to the minute, tends in places to introduce the atmosphere of an aircraft Log Book between the most interesting descriptions of the countries over which he flew. The chapter on his flight out to Abyssinia to deliver an aeroplane to the Negus is important in view of recent events, and gives an unusual view of Abyssinian law and justice from the quick, shrewd observations of a short visit.

In addition to these pioneering flights there are a few most instructive chapters, *i.e.* "Alpine Flying," "One day flight to Africa and back," "The South Atlantic Service," and "A Modern Air Passenger Service," which bring to the reader all the romance of air development. He describes how modern air services have overcome the problems of navigation until now, "while seafaring craft bound to a single plane have no possibility of avoiding storms . . . aircraft soar triumphantly upwards to emerge resplendent into another world—a world which it has been the privilege of this generation to discover." D. F. McI.

THE MONTHLY RECORD

MOUNT EVEREST EXPEDITION

The account of this year's Mount Everest Expedition in the Journal for June, pp. 574–576, carried the story to May 25, on which date Mr. Ruttledge reported from Camp III that the conditions were baffling and unsatisfactory. The North Col camp had been occupied on Friday May 15 and evacuated on Monday May 18 on account of heavy snow, which had rendered the upper slabs of the mountain unclimbable, so that on Thursday May 21 the whole party were back at Camp I. By May 24 a very early monsoon had already reached Mount Everest and the party which had returned to Camp III were awaiting a break in the monsoon.

But no break appeared, and on Thursday May 28 Camp III was again evacuated since nothing could be done in the heavy snowfall, and climbers and porters were better at the lower camp in such conditions.

In his telegram from Camp I on May 29 Mr. Ruttledge analyses the abnormal conditions of the season. The exceptionally mild weather which had made it easy to establish the glacier camps had failed to remove the snow from the upper slabs, so that when the first party were early on the North Col on Friday May 15 the mountain above was unclimbable. Owing, presumably, to want of normal opposition from the north-west winds the monsoon had reached the Himalaya in only four days from the Bay of Bengal, in great strength, and all previous experience showed the North Col slopes unsafe as soon as the monsoon appeared. There remained the possibility that they might be climbed at night.

On Saturday May 30 the monsoon temporarily weakened and the strong north-west wind began blowing the snow in great sheets from the mountain, so the advance was resumed that day, but did not get beyond Camp II, as a heavy gale from the west laid another thick mantle of snow. On Tuesday June 2 the upper reaches were again cleared by a hurricane, so that the upper slabs began to look negotiable, and the party once more moved up to Camp III.

On Thursday June 4 a careful reconnaissance of the North Col slopes led by Smythe showed that a renewed ascent was justifiable; but conditions changed again, and on Friday June 5 the snow was so deep on the critical traverse that a new line of advance to the crest was tried but proved impossible, and the whole party had to retreat again, getting back to Camp III with all the 42 porters. It was very tantalizing to see the North Face of the mountain in better condition while the North Col was unapproachable. All this day a tremendous north-westerly wind continued to sweep the mountain, and on the following day the North Face was so evidently negotiable that Shipton and Wyn Harris set off to inspect the doubtful track to the col. The surface was hard and good, but immediately they got on a horizontal traverse which had always been suspected as dangerous, the whole snowfield avalanched and the two climbers barely escaped. This investigation confirmed beyond all doubt that the North Col slopes were impossible once the monsoon currents had begun to decay them.

On Monday June 8 it was therefore decided to proceed up the Main Rongbuk Glacier to examine once more the western side of the North Col reported upon unfavourably in previous years. On Wednesday June 10 the whole party were encamped at the head of the main glacier under the North Face of the mountain, though the monsoon had regained strength. Seven climbers ascended the icefall but clouds prevented an examination of the upper slopes, and the snow on the mountain was so deep that it became evident that Mount Everest could not be climbed this year. During a temporary lull on June 14 Smythe and Wyn Harris took a light camp to the point gained on the 10th, just out of reach of avalanches

constantly pouring from the North Peak, and next morning, Monday June 15, satisfied themselves that in certain conditions a safe and more direct route to the col could be made on this side, a discovery which may be of value on another occasion, but which was unhappily made in a season which had not given any single opportunity. Therefore Mr. Ruttledge concluded his telegram of June 15 with the melancholy words, "Expedition must now depart as deep snow everywhere renders further effort useless."

THE "FAR EAST"

Dr. F. C. Wieder, of Noordwijk, Holland, is anxious to determine the origin of the phrase "Extrême Orient" or "Far East." Some time ago he received a photograph of a map on parchment, which was alleged to be of the period of Marco Polo. Internal evidence however suggested that it was of much more recent origin. The long title in Italian contained the words "extrema oriente." Dr. Wieder concluded that this was additional evidence for a recent date, and endeavoured to ascertain the origin of this phrase. In this he met with greater difficulty than he had anticipated. No explanation is to be found in Larousse or in Vivien de Saint Martin's "Dictionnaire géographique." The oriental scholars at Leiden University and Mr. Lawrence Martin of the Library of Congress were also unable to solve the problem. The latter pointed out that Backer's "L'Extrême Orient au moyen âge," 1877, and Hallberg's "Extrême Orient dans la littérature et la cartographie de l'Occident des XIII^{e}, XIV^{e}, et XV^{e} siècles," 1907, contain no documents in which this phrase is used. Dr. Wieder will therefore be glad to receive any information which will assist in determining its origin.

A preliminary search in the Society's Library has failed to reveal the use of this phrase before the second quarter of the last century. It appears however that it is possibly of English origin. No occurrence of its French equivalent has been so far discovered before the period of Backer's work. In 1846 however G. F. Davidson published a work entitled, "Trade and travel in the Far East," and the phrase is used frequently in the text without comment. Towards the end of the century it had a wide currency. The Oxford English Dictionary throws no light upon its history.

OBITUARY

ARTHUR DOUGLAS CAREY

Mr. A. D. Carey, who died in his ninety-second year on June 11, passed into the Indian Civil Service in 1864, and served for some time in the Bombay Presidency. Becoming interested in Central Asia, he began to plan an extensive journey on the frontiers of Northern Tibet. This "long-cherished scheme" came to fruition in 1885, when he left Simla to spend two years' leave at his own expense in Chinese Turkistan. Carey set out *via* Lahoul for Leh, where he was joined by Mr. Andrew Dalgleish, who acted as Turki interpreter and surveyor. Taking the little-used trade route to Polu, they entered Turkistan at Keriya, to the surprise of the Chinese officials, who were unaware of this route. Their first achievement was to travel northwards round the Tarim basin, by Khotan (where they just missed the Russian traveller Prjevalsky) and then by Kucha to their winter quarters at Kurla. Having reorganized their party, they then struck south to Charklik and the Lop Nor basin. In the mountains to the south they encountered their most difficult stage: so inhospitable was the

country that no human being was encountered for eighty days, and their animals were almost lost through lack of pasture. The situation was finally saved after a strenuous journey for supplies by Carey among the Mongol tribes. They were then south of the Angirtakshia pass, on the Lhasa road, but the long delay and official discouragement led Carey to abandon his intention of travelling towards that city. Turning northward they reached Sachu and crossed the Gobi to Hami. Their return journey lay to the north of their outward route, *via* Turfan and Kucha to Yarkand. Leh was reached by the Karakoram pass. Much of the route, particularly in the Tsaidam region, had not previously been traversed by Europeans, and much information regarding the Tarim basin and Lop Nor was collected. The travellers were with few exceptions extremely well received by the inhabitants, and particularly at Urumchi by the Chinese Governor-General, who had recently restored Turkistan to Chinese rule. For this journey Mr. Carey received the Founder's Medal of the Society in 1889. The sole published account of his experiences is in the *Proceedings*, New Series, vol. 9, 1887, pp. 731–52. The itinerary compiled by Mr. Dalgleish is printed in volume three of the *Supplementary Papers*, 1893. Mr. Carey retired from the Indian Civil Service in 1893, and passed the remainder of his life in Switzerland.